

**Buying Modernity?
The Consumer Experience of Domestic Electricity in the Era of the Grid**

A thesis submitted to The University of Manchester for the degree of

PhD

in the Faculty of Life Sciences

2012

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Word Count: 76 820

Abbreviations

<i>BBC</i>	<i>British Broadcasting Corporation</i>
<i>BVC</i>	<i>British Vacuum Company</i>
<i>EAW</i>	<i>Electrical Association for Women</i>
<i>EDA</i>	<i>Electrical Development Association</i>
<i>HMSO</i>	<i>Her Majesty's Stationery Office</i>
<i>IET</i>	<i>Institution of Engineering and Technology</i>
<i>MOSI</i>	<i>Museum of Science and Industry</i>
<i>SML</i>	<i>Science Museum London</i>

Abstract

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In 1927 the Central Electricity Board began to oversee the building of the national grid. In the early development of electricity, electrical power was consumed by those privileged enough to be able to afford their own generators. A small number of local undertakings were established in urban centres during the 1920s but it was the nationalisation of electricity supply that gradually made electric power available to the masses. The electrical supply industry marketed electrical appliances as economical, efficient and clean alternatives to gas and coal, and, as time and labour saving appliances to the housewife. This thesis employs an interdisciplinary approach to the consumption of electricity and electrical technologies within the domestic environment, drawing upon the methodology of social construction of technology, historical geography, material culture studies and oral histories. It aims to compare and contrast constructions of the ideal modern electric home and electrical appliances with the lived reality of experiences of electricity in different homes across Britain to draw out the tensions between the two and explore how they mutually constructed and shaped each other. Using case studies of electric cookers, refrigerators, electric irons, vacuum cleaners, electric toys, radios, electric razors and hairdryers, it explores how the electrical industry constructed modernity and the ideal modern home in advertising material, the construction of the ‘housewife consumer’ and alternative users in the home, and the fluid nature of domestic space and its relationship with electricity.

Declaration

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Acknowledgements

This project was generously funded by an Economic and Social Research Council Case Award in Collaboration with the Science Museum London.

I would like to thank Dr Jeffrey Hughes for his supervision, advice and support throughout my research and in the writing of this thesis. I also appreciate the guidance and support of Dr James Sumner and Dr David Kirby, particularly in the early formulation of my ideas. I am grateful to Helen Peavitt and Tim Boon at the Science Museum London, for their advice and encouragement. I would also like to recognise the curatorial team as well as the library, documentation, and archival staff at the Science Museum London who willingly helped with my queries and were a pleasure to meet. I also want to thank Sarah Hale, the archivist at the Institute of Engineering and Technology, and Jan Shearsmith at the Museum Of Science and Industry for patiently helping me navigate my way through the archives.

I wish to thank all the staff and students at the Centre for the History of Science, Technology and Medicine for their academic and social support throughout my time in Manchester. The opportunity to participate within the academic community, at seminars and reading groups, and positive encouragement to discuss and develop my own work, was invaluable in my intellectual development. I would like particularly to thank Neil Pemberton, Alice Nicholls, Joanna Baines and most especially Rachael Russell for their friendly support.

I owe a big thanks to all those who agreed to participate in my Oral History Interviews, for generously giving their time and sharing their experiences with me.

Last but not least, I could not have achieved so much without the support of all my family and friends who have been an invaluable source of encouragement.

Chapter 1

Introduction

**The modern way of Housekeeping
The Electric way**

The central title is "The modern way of Housekeeping The Electric way". Below the title are five small black and white illustrations:

- A woman preparing tea at a table with a kettle.
- A woman using a vacuum cleaner.
- A woman ironing clothes.
- A woman standing near an electric range.
- An elderly man sitting by a fireplace.

Text descriptions for each illustration:

- "5% Tea is so easily prepared with the Electric Kettle."
- "The home is clean all the time with a vacuum cleaner."
- "Ironing with an Electric iron is so handy and quick."
- "The Electric range is clean, economical, & heat easily controlled."
- "The Electric fire is ready in an instant. No dust, no smoke, no dirt, no fumes."

THE ELECTRIC RANGE can be placed in any position. It is independent of flues. You obtain certain results, always the same, no failures. The temperature of the oven is controlled by switches. This means automatic cookery.

THE ELECTRIC IRON can be used in any room where Electric Light is available. The surface is always bright and of an even temperature. No walking from stove to table or bother about keeping the Iron at the right heat.

THE ELECTRIC CLEANER helps to maintain a high standard of cleanliness all the year round. It collects dirt and keeps carpets free from germ-carrying dust which may cause ill-health to children playing on them.

THE ELECTRIC FIRE springs into cheerful warmth at a touch of the switch. It is the only one quite free from smoke, dust and fumes, and can be placed anywhere in the room.

Issued by
The British Electrical Development Association, Inc.,
15, Savoy Street, Strand, W.C.2.
Telephone: Temple Bar 4570.

Image 1.1: Electrical Development Association

Advert for Electricity, 1928.¹

¹ EDA, (1928) 'The Modern way of Housekeeping' In *The Electrical Age* 1(10): p405.

The title of this thesis ‘Buying Modernity?’ inherently suggests the possibility that individuals could buy into modernity by purchasing electrical goods. This is a concept that is also suggested by the slogan in the 1928 advert pictured in Image 1.1., ‘The modern way of Housekeeping. The Electric way’. Modernity is a slippery concept that is hard to pin down and define. In the Oxford English Dictionary it is variously given as the ‘condition of being modern’ and:

An intellectual tendency or social perspective characterized by departure from or repudiation of traditional ideas, doctrines and cultural values and beliefs (chiefly those of scientific rationalism and liberalism).²

Modernity as a process is in this view both destructive of the traditional and creative of the new. American philosopher Marshall Berman writing in the 1980s explices this tension in the statement that, ‘To be modern is to find ourselves in an environment that promises adventure, power, joy, growth, transformation of ourselves and the world – and, at the same time, that threatens to destroy everything we know, everything we are.’³ In the nineteenth century modernity in Britain has been understood as an often urban phenomenon linked to industrialisation in the cities and as the beginnings of a move from arts and crafts to mechanisation. In the twentieth century commercialization meant that ‘British Modernity’ became intimately related to the processes of production and consumption. In Britain, electrical consumer goods offered one way through which consumers could increasingly participate in British modernity. I want to define British Modernity as a manifestation of the social conditions of mass consumption, and at the same time, as promoting a social aspiration to a hi-tech, scientific and fashionably up-to-date state through consumption. Although people were increasingly able to buy into the ideal of British modernity through electrical consumer goods, the processes behind this modernising were fragmented and inconsistent. The majority of people bought into it incrementally and as dictated by their affordability and needs rather than making a sudden jump towards a modern ideal. The concept of modernity thus has a different construction in different contexts and a different meaning for the individual social classes in terms of its aspirational definition. Electrical technologies in their various incarnations allowed varying degrees of modernity to be achieved.

² ‘modernity, n.’ (2002) *Oxford English Dictionary Online*.
[<http://www.oed.com/view/Entry/120626>, accessed September 2012].

³ Berman, M., (1982) quoted in Harvey, D., (1992).

As well as the complicated notion of modernity and its relationship with consumption, the advert pictured in Image 1.1., also embodies a number of other aspects that I will explore in this thesis. First, the advert was released just one year after the Central Electricity Board began to oversee the building of the national grid in 1927. Transformations in the design, use and meanings of the domestic environment between the 1920s and 1960s were linked to the establishment of this extensive network of electricity supply and new electrical technologies that were consequently but not inevitably developed. I have chosen to begin my study with the construction of the national 'grid' when electricity was introduced as a source of domestic power that became available to the masses in Britain and to conclude it in 1960, by which time I believe electrical technologies had begun to stabilise and no longer contributed in such a significant way to the changes in domesticity, consumerism or society that occurred. Second, the advert was produced by the Electrical Development Association (EDA), established in 1919, to promote the consumption of electricity and electrical appliances and published in the journal of the Electrical Association for Women (EAW).⁴ A number of different electrical appliances are depicted and described in the advert above but this represents but a small proportion of the electrical consumer goods that were available for consumption by 1960. Electrical consumer goods broadly encompasses all electrical goods available for purchase on the British domestic market, either outright or through hire purchase schemes. These ranged from electrifications of existing technologies such as irons to weird and wonderful novelties like the teasmade; and from necessities like the refrigerator to luxurious electric blankets and televisions. The numerous types and forms of electrical appliance have led me to focus on two case studies per chapter that best help to illustrate my argument.

Thirdly, the advert exclusively depicts female users of electrical appliances. This can be partly explained by the fact that it is published in a journal that targeted women and partly by the fact that women were the perceived consumers in the domestic sphere and the principal users of electrical appliances in the home. The status of women as consumers of modernity and housewives is something that I wish to explore throughout the thesis. Fourthly, the advert specifically refers to the relationship between electricity and housework. Housework practices were altered by the introduction of electric light to extend the working hours in a day and new electrically powered technologies that supposedly reduced the labour and time invested in them. Ruth Schwartz Cowan's work, discussed in more detail later, questions the straightforwardness of this classification as labour and time saving devices in the home. Yet, there are still observable changes in housework practices as a consequence of the availability

⁴ I will look at the history of electricity supply and the organisations linked to the distribution, promotion, and consumption of electricity more fully in the second chapter of this thesis.

of new technologies as well as changing social practices as domestic service declined and more married women took on work outside of the home.

Central to all of these themes is the domestic context within which electricity and electrical appliances were consumed. The design of the home changed during this period due to different stylistic influences, changes in the use of space within the house, and the introduction of new technologies.⁵ Domestic space came to be characterised by its relationship with electricity to varying degrees as I will illustrate throughout the thesis. I want to balance representations of electricity by the industry as cheaper, cleaner and more efficient than gas, and a silent servant that would alleviate the drudgery experienced by housewives, with the experiences of electrical technologies by domestic consumers in their own homes. The contrast reveals that experiences of electricity were individual and varied greatly both socially and regionally. I will also consider how electrical technologies were accommodated within the home and how the space in the home was altered by their presence and use.

In the remainder of the introduction I will review the literature on mass consumption in the twentieth century, define the housewife consumer and other consumers in the home, and review the literatures on electrical technologies in the home and on technology and gender. These literatures provide a context for my empirical chapters and have helped to inform and shape my approach to the consumption of domestic electricity. Finally, I will outline the different case studies and focus of each of the chapters in the thesis. When historians of technology are presented with the topic of domestic technology it is the work of Ruth Schwartz Cowan that most often springs to mind. As a consequence I wish to begin by outlining her principal arguments and provide some examples of how the British context differed from the American setting of her study.

1.1. 'More Work for Mother': The American and British Context

Ruth Schwartz Cowan's work on the industrialisation of housework through the introduction of new domestic technologies in America focuses on the household as part of a larger economic and social system with which it constantly interacts.⁶ The agency of determining the industrialisation of the home was not limited to householders alone but also to the efforts of politicians, industrialists, and economists outside of the home. As a consequence of this industrialisation and the rise in the consumption of products made outside of the home, the home became no longer self-sufficient, but reliant on the consumer

⁵ See Chapter 2 for a more detailed discussion of the literature surrounding the changing British home.

⁶ Schwartz Cowan, R., (1983): p6.

market. She goes as far as to assert that no form of housework is a homogenous activity free from all outside influence, 'Each implement used in the home is part of a sequence of implements – a system - in which each must be linked to others in order to function appropriately.'⁷ Schwartz Cowan thus introduces the concepts of *work processes* and *technological systems* within which domestic technologies must be situated to reveal the complexities of their impact upon the home and housework. By using these as a framework she was able to show how the introduction to the home of many 'labour-saving' technologies resulted in the counter-intuitive creation of 'more work for mother'.⁸ Whilst reducing drudgery the indirect impact of electrical appliances was the creation of more regular and new forms of housework. Christine Bose, Philip Boreano and Mary Malloy's 1984 paper develops this argument using a broad definition of technology including utilities, appliances, foods, and market-sector services such as rubbish collection.⁹ They conclude that the indirect impact of technologies was the creation of more and new forms of housework rather than making it easier, that technology does not make housework less expensive, that any time saved is offset by other household activities and the maintenance of technological systems, and finally that there has not been a redistribution of labour within the household.¹⁰

The idea that domestic technologies might create more work was also articulated by Elizabeth Wilson when considering British urban domesticity. She claimed that with the introduction of new domestic technologies, 'Women were offered a new vision of comfort and family life, yet were increasingly imprisoned in the genteel interior, and the new consumerism also increased the amount of domestic work they had to do.'¹¹ For example the weekly washing that would have been a long labour intensive process once a week using a copper and mangle, could, with the aid of washing machines, be done more easily and in less time. However the comparative ease of washing using a washing machine, might promote the more frequent washing of clothes and sheets. Alternatively the frequent and in some cases daily use of a vacuum cleaner might replace the occasional beating of carpets. Schwartz Cowan makes clear that the process of industrialisation in the home was not simply a direct progression from beginning to end but experiences changes in pace and direction. Changes in the household practices within which new technologies were incorporated took longer to evolve than might be initially assumed.

⁷ Schwartz Cowan, R., (1983): p13.

⁸ Schwartz Cowan, R., (1983).

⁹ Bose, C.E., et al. (1984): p56.

¹⁰ Bose, C.E., et al. (1984): pp80-81.

¹¹ Wilson, E., (1991): p105.

Schwartz Cowan's approach of looking at the home and housework as part of larger technological, social and economic systems can equally be applied to a study of electrical domestic technologies in Britain. The British context was however different to that of America, politically, economically and socially. The development of electricity supply on a national scale in Britain occurred later than America, where power systems for electric lighting in main cities were coming into being at the end of the nineteenth century.¹² Thus there was a lag in the large scale provision of domestic electric power supply to enable the use of electrical technologies and thus the industrialization of housework in British homes. In America, household utilities had become widely available by the 1920s and 1930s, with electrical wiring in 79% of households by 1949. In Britain, by contrast, despite the birth of the national 'grid' in 1927, electricity supply did not reach the majority of households until after the Second World War in the 1950s. Whilst the inter-war period in Britain saw a rapid increase in electrification, electrical appliances remained upper and middle class consumer items. It was partly a consequence of the large scale inter-war housing schemes and post-war reconstruction of suburban estates and new towns to provide acceptable working class housing that bought electricity within the reach of the British working classes.

As well as differences in the development of electricity supply within the American and British context, there were also differences in the processes of consumption. The shift in the home as a space of production to one of consumption that Ruth Schwartz Cowan describes took longer in Britain than in America. Matthew Hilton views consumerism in twentieth century America as being of greater social importance in a country where 'material abundance has frequently been equated with nationhood and citizenship.'¹³ Similar associations between consumerism, modernity and nationality can be seen in Britain in the 'Britain Can Make It Exhibition' of 1946.¹⁴ However, in the early years of the development of electrical technologies for use in the home, the British consumer market was reliant on American imports and dominated by large American Companies, such as General Electric and Westinghouse. In addition American films, novels and advertising promoted American ideals and visions of modernity among British consumers. Consumption of electrical domestic technologies can thus be seen as an aspiration to American social ideals and fashions. The development of the British electrical industry and its growth alongside, and in competition with, American

¹² Hughes, T.P., (1983): p33.

¹³ Hilton, M., (2003): p6.

¹⁴ The Britain Can Make It Exhibition of 1946 was not only about supporting British manufacturers within Britain but it also sought to encourage British exports that would aid economic recovery after the Second World War.

manufacturers is explored to some extent in the thesis. By 1960, when my study ends, British manufacturers had become more prominent on the consumer market.

It is the British story as distinct from the American that I wish to tell in the chapters that follow by counterposing the construction of the use of electricity within images of the ideal modern British home in advertising, consumer exhibitions and literature with the diverse and disparate reality of experiences across different social groups in British society. The electrical industry portrayed the ideal modern home as a clean, efficient and streamlined space. British homes were however hugely diverse in size, shape, and the way in which they aspired to and achieved varying degrees of modernity. The tensions between the constructed ideal and lived realities of experiences of domestic electricity feature centrally in my approach throughout the thesis.

1.2. ‘Buying Modernity’: Consumption and Modernity

In order to understand how consumers experienced electricity in their homes it is necessary to comprehend the history of consumerism in the early twentieth century, and how the social, political and economic aspects of consumption impacted upon the experiences of the consumer. Understanding the history of early twentieth century consumption is crucial in providing a context for the various advertising and trade literature materials that I draw upon in my research. In this section, I wish to outline the history of twentieth century consumption, examine the relationship between consumption and modernity in the existing secondary literature and explore the role of advertising in selling electricity.

Studies on consumption have made a move away from looking at it as merely an economical exchange and emphasise the importance of the social context in which objects derive value.¹⁵ Daniel Miller in particular, highlights how consumption is tied to broader relationships between industry, consumer and products within their specific historical context.¹⁶ Matthew Hilton’s work on consumerism looks at how consumption became closely linked with politics during the first half of the twentieth century, particularly among socialist circles such as the Independent Labour Party and co-operatives.¹⁷ Hilton’s approach is heavily focused on consumption from the point of view of political but also of consumer organisations, exploring how they drew upon consumerism for broader socialist political ends. He rightly

¹⁵ Miller, D., (1987): p133.

¹⁶ Miller, D., ed. (1995): p31.

¹⁷ Hilton, M., (2003). The co-operative movement was seen as a middle path between government laissez faire and state control.

emphasises the rising social importance of consumption during the twentieth century but neglects the process of consumption at the level of the individual. The politics of consumption brings to the fore the active nature of the consumption as a process upon which political meanings can be placed to achieve specific goals.¹⁸ Hilton maps how in the inter-war years the concerns of socialist organisations were grounded in the provision of and access to basic necessities as a social right.¹⁹ During this period the Independent Labour Party campaigned for the establishment of the ‘living wage’.²⁰ Both Hilton and Karen Hunt, who also wrote a paper on the politics of consumption, view the involvement of women in the politics of consumption as increasing their political power in the public sphere.²¹ In the 1930s and through into the 1940s Hilton claims, ‘consumption was the point of entry for freeing the state, society and the economy from the supposedly narrow-minded stronghold of both business and the trade unions.’²² Hilton represents consumerism as a social force that could be manipulated on behalf of individuals. Women were particularly important in the 1930s cost of living campaigns run by the labour party and trade unions.²³ However throughout his study Hilton emphasises how production interests continued to dominate and many consumer driven incentives were not realised to the extent which they had been envisioned but remained marginalised.

In the 1940s the politics of consumption was altered by wartime controls and heavy governmental intervention. Ina Zweiniger-Bargielowska views governmental controls on the consumption of non-food items as removing luxuries from the market that had previously been an indication of the wealthier classes in society.²⁴ The 1940s were traditionally viewed as a period of austerity in Britain but it was also a period when the wants of the consumer as well as their basic needs had to be considered since many had become accustomed to the consumption of luxury items prior to the outbreak of war. Hilton acknowledges how a proportion of working class incomes were in fact used for goods linked to ‘identity formation’ and ‘psychological satisfaction’.²⁵ Furthermore Hilton problematizes the notion of luxury at this period of time, ‘It could either represent, in the classical sense, the vampirism of the aristocracy and futile status seeking of bourgeoisie, else it connoted the dehumanising

¹⁸ Hunt, K., (2000): p390.

¹⁹ Hilton, M., (2003): p80.

²⁰ Hilton, M., (2003): p89.

²¹ Hunt, K., (2000): p392.

²² Hilton, M., (2003): p2.

²³ Hilton, M., (2003): p108.

²⁴ Zweiniger-Bargielowska, I., (2000).

²⁵ Hilton, M., (2003): p138. See also studies on the consumption of white and brown goods, Bowden, S. & Offer, A., (1994): pp725-748.

standardisation and compensatory pleasures of the mass market ‘culture identity’.²⁶ Hilton considers electrical appliances to sit between necessities and luxury items due to their use in the domestic environment, which was considered to be outside of the influence of politics.²⁷

The late 1940s also saw the beginnings of the establishment of consumer councils. In 1946 the Advisory Committee on Consumer Goods was established by the National Council of Women, an organisation that like the Women’s Institute constituted conservative middle class women. For Hilton this moment ‘signified a broader shift in consumerism in which the middle-class housewife was increasingly to become the voice of the consumer interest.’²⁸ He links this to wider social changes in the political significance of women after their participation in the war effort. The participation of women in such societies as this, and in the EAW (see Chapter 2), provides examples of how middle class women supported their husband’s careers by participating in organisations linked to their profession.

The 1950s bought a period of affluent consumerism to Britain. The new conservative government placed a greater emphasis on domestic issues and bought the housewife into greater prominence.²⁹ The definition of consumption as use, as opposed to the transaction of purchasing, is increasingly used by economists as a means of defining the process of consumption according to Hugh Mackay in his 1997 edited volume on *Consumption and Everyday Life*. He further illustrates that it was promoted historically by consumer magazines in the 1950s that placed a focus on the utility of different objects as well as value for money, for example, *Which?* magazine.³⁰ *Which? Magazine*, established in 1957 following the birth of the Consumer Association the previous year, bought with it an ‘ethos of professionalism which meant that the objective and comparative assessment of branded goods could rectify the imbalances in the marketplace and enable the consumer to become the true sovereign of the economy.’³¹ In the introduction to the first issue, the Consumer Association pronounced that ‘*Which?* is for the person who wants to know *what* he is buying. It supplies the information, impartial, accurate and thorough, which will enable people to get better value for their money.’³² Education and guidance in consumption was contemporaneously seen as of greater benefit than consumer protection. John Newsom, who wrote about the education of girls in 1948 saw the housewife as an emerging consumer who needed to be educated, ‘to the point where she rejects the fundamentally futile and aesthetically inept and demands what is fitting

²⁶ Hilton, M., (2003): p137.

²⁷ Hilton, M., (2003): p19.

²⁸ Hilton, M., (2003): p168.

²⁹ Hilton, M., (2003): p 180.

³⁰ Mackay, H., ed. (1997): p2.

³¹ Hilton, M., (2003): p196.

³² Association for Consumer Research LTD, (1957) ‘You and CR’ In *Which?* (Autumn): p3.

and beautiful...Woman as purchaser holds the future standard of living of this country in her hands.³³ Consumer magazines and organisations took on this role in the 1950s and politicised the process of consumption by giving greater agency to the consumer through education.

As well as being a vector for political goals related to standards of living and the rights of the consumer, consumerism was closely linked to national representations of and celebrations of British modernity in the 1940s and 1950s. I move on to consider these issues in the next section.

Consumerism and modernity

The public display of consumer items for the home had been prominent in the annual Daily Mail Ideal Home exhibition, since its inception in 1908. Viviana Narotzky claims that Ideal Home exhibits offered ‘a commodified palette of fashionable trends, new materials, emerging domestic technologies and shifting cultural priorities.’³⁴ Exhibitions and displays of domestic technologies as modern promoted their desirability and status as consumer products.

Elizabeth Outka used a case study of the store Selfridges to unpick the contradictions in modernity and consumption within commercial displays. Her argument counters the notion of a straightforward movement towards mass consumption in early twentieth century Britain by unravelling the tensions between ‘aesthetic modernism’ and ‘mass culture’ in the displays of Selfridges.³⁵ She aims to counter literary scholar Andreas Huyssen’s concept of the great divide, in which he asserts that modernism defined itself in opposition to mass culture by showing the complicated and contradictory sales strategy at Selfridges. Selfridges marketed its goods such that they implied they were unique whilst the store, ‘simultaneously invoked the modern pleasures of the mass market: the goods were available to all...’³⁶

The use of the term ‘aesthetic modernism’ by Elizabeth Outka relates to modern aesthetics in the design of products, such as clear sharp lines, streamlining and the use of modern materials. Adrian Forty’s book *Objects of Desire* makes a connection between electrical technologies and the changing meanings of home. He relates the significance of the context for use on the design of the object. As a mass market for electrical appliances opened up modern aesthetics became increasingly important so that they were commensurable with

³³ Newsom, J., quoted in Wilson, E., (1991): p112.

³⁴ Narotzky, V., In Aynsley, J. & Grant, C., (2006): p260.

³⁵ Outka, E., (2005): p313.

³⁶ Outka, E., (2005): p314.

new understandings of the home.³⁷ ‘Modern aesthetics’ can thus also be interpreted as referring to the way in which products were displayed within constructions of the modern home. Placing domestic technologies within a display of a modern interior implies that by purchasing the product, the consumer is also buying the ideal of the modern house and lifestyle. Another example is the Festival of Britain in 1951. Following the austerity of the late forties the Festival of Britain showed the consumer a “modern and scientifically assisted version” of Britain just around the corner.³⁸ The link between modernity and consumerism in the displays of stores and exhibits is just one way in which manufacturers could sell an ideal and their products to the consumer and highlights the importance of marketing in the process of consumption.

A study that incorporates consumption cannot be undertaken without a consideration of the role of advertising in mediating between manufacturer, consumer and product. McFall and du Gay in a chapter on consuming culture through advertising in *The Changing Consumer* describe how advertising has been understood as linked to changing relationships between people and material culture.³⁹ The role of advertising in the rise of mass consumption during the twentieth century was to both generate and manipulate markets for different goods.⁴⁰ From 1900 onwards in America packaging became more common as branding and clever advertising allowed manufacturers to build a relationship with their consumers.⁴¹ Strasser lays emphasis on the importance of generating demands for specific brands in order to compete on the American consumer market but recognises that ‘manufacturers’ manipulative power was limited by ethnic, regional and personal preferences.⁴² Read another way advertising was limited in its ability to remove the influences of consumer agency.

The home and ideal representations of the modern interior were highly prevalent in advertising for domestic products during the first half of the twentieth century. This was facilitated by the proliferation of photographic, printed and film media. At the turn of the twentieth century, architect Adolf Lear proclaimed that:

There are designers who make interiors not so that people live well in them, but so they look good in photographs. There are the so called graphic interiors, whose

³⁷ Forty, A., (2000): p195.

³⁸ Conekin in Conekin, B., et al. eds. (1999): p245 quoted in Hilton, M., (2003): p145.

³⁹ McFall, L., & du Gay, P., In Miles, S., et al., eds. (2002): p77.

⁴⁰ Mackay, H., ed. (1997): p2.

⁴¹ Strasser, S., (1989): p29.

⁴² Strasser, S., (1989): p17.

mechanical assemblies of lines of shadows and light best suit another mechanical contrivance: the camera obscura.⁴³

According to historian Jeremy Aynsley, representations of the interior in both the exhibitions mentioned above and in advertising ‘contributed to a dominant impetus of the modern period to make the domestic interior a site of consumption, both as a place to consume and in which to consume.’⁴⁴ They further highlight the importance of not assessing advertising on a decontextualized basis. The modern interior and domestic electrical appliances, as they were designed and represented in advertising and printed materials, did not reflect the actual impact of modernism on everyday life. The chapters that follow will look at how electrical technologies were constructed and represented as modern in advertising and trade material and contrast this ideal with the reality of their day to day use in the home using testimonies in autobiographical and oral history accounts.

1.3. The Housewife Consumer

Advertising for domestic electricity supply and electrical appliances often featured and was explicitly targeted at the ‘housewife consumer’. Adverts appeared in newspapers but also featured heavily in women’s magazines to target the housewife consumer. As well as giving an insight into how the housewife consumer was perceived, such advertising material also helped to construct the housewife by reinforcing and fashioning the nature of her role in the home. The following discussion will consider the historiography on the housewife as consumer to assess how the housewife was imagined and why she was perceived and constructed as the consumer of domestic technologies. It will also look at the agency of the consumer through consumer choice and consider alternative consumers within the household.

At the start of the twentieth century it was highly unusual for married women to engage in work outside of the home. Ruth Schwartz Cowan highlights the importance of work in identifying formation and by extension the performance of housework can be viewed as defining the housewife. The housewife was also defined by her responsibilities for the health and welfare of the household. It was the housewife who became the principal target of advertising for electrical household appliances. Judy Giles’ explores how changes in domesticity between 1918 and 1950 had an impact on how women identified themselves as

⁴³ Lear, A., quoted in Aynsley, J., & Grant, C., (2006): p190.

⁴⁴ Aynsley, J., & Grant, C., (2006): p213.

'housewives'.⁴⁵ She states that the inter-war period was unique in that it allowed a large number of women to choose to become 'ordinary housewives' regardless of their class or social position.⁴⁶ Her paper is a response to feminist arguments about women and domesticity, which represents housework as degrading, such that it claims many women considered housework and home-making to be pleasurable tasks.⁴⁷ In the capacity of housewife, women were the primary consumers of domestic products and I will consider how they were targeted, and constructed as such, by advertisers throughout the thesis.

In 1920, G.D.H. Cole, a prominent proponent of guild socialism and the co-operative movement at the start of the twentieth century, described the problem of the consumer:

Who is the "consumer"? Some say he is Mr. Everybody, and therefore entitled to all power and consideration. Others say that, being Mr. Everybody, he is also Mr. Nobody, and can be safely let out of account.⁴⁸

An early advert by the EDA addresses Mrs Housewife as the consumer of electricity.⁴⁹ This characterisation like G.D.H. Cole's 'Mr Everybody' can be seen as inclusive and classless. Yet early adverts produced at the same time during the 1920s often depicted a servant using the electrical appliances (distinguishable by a black dress and white pinafore with a cap) despite addressing the housewife as the consumer. The implication in this is that the housewife consumer was at this time limited to upper and upper middle class consumers, who could afford domestic help and to install their own generators, but would not necessarily be using the appliances themselves. The availability of domestic servants declined in the inter-war period and the scarcity of good servants has come to be known as 'the servant problem' both contemporarily and by historians. Many studies that look at changes in housework refer to the increasing difficulties of finding reliable servants. The servant problem was explained by Ginouard as arising from unaffordability of good domestic servants and the greater availability of domestic technologies.⁵⁰ This is a simplistic view that neglects the social construction of a need for new technologies to replace servants as being cheaper and more efficient, as well as the reduction in numbers of servants available, generating a need for these technologies.

However he does go on to explain how factory jobs offered better hours and better pay as well

⁴⁵ Giles, J., (1993): pp239-253.

⁴⁶ Giles, J., (1993): p239.

⁴⁷ Giles, J., (1993): p240.

⁴⁸ Cole, G.D.H., (1920) *Guild Socialism Restated* (London): p78 quoted in Hilton, M., (2003): p94.

⁴⁹ MOSI Archives, 1989.339/486/19, (n.d.) EDA 30 'Just a turn of the switch'.

⁵⁰ Ginouard, M., (1980):p308.

as greater independence to young women than domestic service.⁵¹ Judy Giles considers that the servant problem had a big effect on women's roles within the home and their understandings of their positions within society.⁵² She further highlights that the dislike of housework expressed by educated women 'had its roots in a desire to be distinguished from 'the servant class'.⁵³ The changing nature of the home and housework was linked to a wider social and cultural context outside of the home since women were taking on paid employment.

From the 1930s as electricity began to become available to the masses with the construction of the national grid it is noticeable that servants are no longer depicted as the user of electrical appliances in adverts. Instead the generic image of the user becomes one of a well-dressed cheerful woman in an apron. Among the middle classes, where the servant problem had the greatest impact, electrical technologies provided an alternative to aid the housewife in meeting socially acceptable standards of housekeeping. Electricity also came increasingly within the means of working class housewives in the 1940s and 1950s. Hilton summarises historical approaches to the housewife consumer in the following manner, 'Social historians have focused on the working-class housewife as the family strategist, an often adept and highly skilled manager of the weekly budget and an often imposing presence within the household whose domestic authority was rooted in her success or otherwise in matters of consumption.'⁵⁴ In this definition domestic consumption was central to the role of the working class housewife and her identity. There were variations in the definition and role of the housewife and in access to electrical technologies between different social classes but household management was central to the work of all housewives, and became a unifying theme in advertising.

As noted above the housewife was targeted by magazine advertisements, such as Image 1.1. as the consumer of domestic electrical appliances. One of the principal forms of sources for my research into the advertising of electrical household appliances is advertising and articles in women's magazines. Margaret Beetham, in her work on early women's magazines and their portrayal of domesticity stated that magazines are, '...deeply involved in capitalist production and consumption as well as circulating in the cultural economy of collective meanings and constructing an identity for the individual reader as a gendered and sexual being'.⁵⁵ In her work on feminine middlebrow novels, Nicola Humble, reminds us that

⁵¹ Ginouard, M., (1980): p309.

⁵² Giles, J., (1993): p239.

⁵³ Giles, J., (1993): p252.

⁵⁴ Hilton, M., (2003): p111. Miller also places the housewife at the centre of domestic consumption. Miller, D., ed. (1995): pp38-39

⁵⁵ Beetham, M., (1996): p2.

women were also consumers of novels and magazines that conveyed ideas of modernism, domesticity and consumerism as well as being a means of renegotiating class and gender identities.⁵⁶ They generated aspiration and offered a form of escapism for their readers. It is the aspiration to ideals of modernity through the consumption of electrical appliances and how this was constructed and promoted in advertising and articles in women's magazines that I will be concerned with in the following chapters.

Advertisers not only drew upon prevalent social understandings of the nature and role of the housewife in their representations but contributed to the construction of the housewife, helping to define her role in such a way as to promote their products. For instance, in attempts to market electric refrigeration they promoted and emphasised the central role of women as caring for the health of the family. As Miller and Rose asserted in a paper on the construction of consumer identities, 'Making up the consumer entailed simultaneously making up the commodity and assembling the little rituals of everyday life which would give that commodity meaning and value.'⁵⁷ However in his study on the politics of consumption, Hilton identifies a conflict between business attempts to construct the consumer and the desired role of the consumers themselves in this process.⁵⁸ Consumers were not passive, but actively engaged in the process of consumption through their choices.

Consumer agency is not absent in the process of consumption and in the construction of the consumer, since it is ultimately the consumers who choose whether or not to purchase a product and what appeals to them. Elizabeth Wilson sees the home as a unique space in which women could exert their choice for consumer items. Cowan asserts that this choice nearly always involves some form of compromise, '...despite the diversity of what is available for purchase, almost nothing that we buy has been made "for us", to fit special needs that we may have.'⁵⁹ Consumer products are however deliberately designed to create desire for them among intended users.⁶⁰ Through their marketing goods can be made to appear symbolic of specific consumer groups and 'lifestyles' in order to appeal to a specific consumer. Likewise consumer choice and experience determines the directions in which products are developed to meet consumer demands. The literature surrounding consumption does however highlight how choice is a more complex concept than is often assumed and, is not an '...autonomous, independently generated act.'⁶¹ The choice of the consumer is often determined by what is

⁵⁶ Humble, N., (2001): p5; p9.

⁵⁷ Miller, P. & Rose, N., (1997): p6.

⁵⁸ Hilton, M., (2003): p193.

⁵⁹ Schwartz Cowan, R., (1983): p7.

⁶⁰ McFall, L. & du Gay, P., In Miles, S., et al., eds. (2002): p75.

⁶¹ Miller, D., ed. (1995): p36.

available and, as Cowan highlights, is mediated by price and convenience of the goods.⁶² The agency of consumers should not be underestimated not only in terms of their choices but also in terms of consumer activism.

After the Second World War, the roles of women changed as housewives and the relationships between individuals in the home were altered by increasing numbers of working women, large scale unemployment, and increasing participation of men within the home both in terms of leisure activities and domestic work. As well as being principally the dominion of the housewife during the first half of the twentieth century Schwartz Cowan also sees housework as characteristic of society:

It is the first form of work that we experience as infants, the form of work that the largest proportion of us (to wit, almost all women) identify as the work that will be the principal definition of our adulthood. It is also the form of work that each of us – male and female, adult and child – pursues for at least some part of each week; ...⁶³

This universal nature of housework as an activity means that the characterisation of the consumer of electrical appliances in the home to aid housework is not limited to the housewife alone, whether other occupants in the home benefit directly from their use or indirectly from their impact on the physical and social environment of the home. The electrical consumer could be either the buyer or end-user, but equally incorporates people experiencing it directly or indirectly within the domestic environment. In addition such a definition of the housewife consumer is limited to the households of married couples and families and neglects other forms of households. For instance, it omits the bachelor or bachelorette. It is also significant to note here the need to disaggregate the notion of the consumer to reveal the variety of individuals who consume domestic electricity and electrical technologies.⁶⁴

Whilst the housewife was constructed as the principal user of domestic appliances there are also a number of domestic electrical technologies not associated with housework, targeted at and used by other potential consumers. Examples include male hobbyist consumers of the radio and radio components, child consumers of electric toys, male consumers of electric tools for the garden and D.I.Y., and male consumers of the electric shaver. There are also the various consumers of small electrical technologies as gifts. A man may be buying an electrical appliance as a gift for his wife and his choices as a consumer may

⁶² Schwartz Cowan, R., in Mackenzie, D. & Wajcman, J., eds. (1993): p225.

⁶³ Schwartz Cowan, R., (1983): pp8-9.

⁶⁴ Miller, D., ed. (1995); Miles, S., et al., eds. (2002): p5.

not reflect the practicalities or experiences of using the appliance in a domestic environment. For example, when purchasing a microwave he might choose the model based upon its technological complexity but this might not relate to its suitability for the practical needs of cooking.⁶⁵ I will explore how the role of the housewife was constructed and represented as well as alternative users of electrical technologies throughout the thesis. In the next section I will discuss the variety of electrical technologies available on the consumer market and look at how historians of technology approach domestic technologies.

1.4. Electrical Technologies in the Home

The main medium for experiencing electricity in the home was through the consumption and use of electrical technologies. Electrical domestic technologies that first became available prior to 1960 include large consumer items like electric refrigerators, washing machines and electric cookers; portable appliances such as vacuum cleaners, electric irons, kettles, toasters, hairdryers and so forth; and technologies for entertainment including electric toys, radios and televisions. The study of domestic technologies falls within the wider discipline of the history of technology. In this section I will first survey the main conceptual approaches to the history of technology including those that focus on technology and consumption, and second review a number of studies that specifically focus on electrical domestic technologies in Britain.

The historiography of technology is characterised by a shift from technological determinism to social constructivist accounts. The ‘technological determinist’ approach views technology as an independent factor that has an impact on society from outside of the social network.⁶⁶ Cynthia Cockburn and Susan Ormrod consider studies which focus on the impact of technologies to be deterministic.⁶⁷ When looking at the consumer experience of domestic electricity it would be easy to place a focus on the impact of domestic appliances but this neglects other important aspects. Most obviously, it does not consider how the domestic setting has an impact on the technology alongside other related social issues. Technological change cannot be considered as an isolated phenomenon as it is intimately related to the social network in which it is situated. The 1993 collection of essays edited by Donald Mackenzie and Judy Wajcman also critiques technological determinism and draws together

⁶⁵ Cockburn, C. & Ormrod, S., (1993).

⁶⁶ Mackenzie, D., & Wajcman, J., eds. (1993): p4.

⁶⁷ Cockburn, C., & Ormrod, S., (1993): p11.

ideas about how social factors had an impact on technological changes.⁶⁸ Technology is not only based on science but the product of a specific set of cultural and social elements, and in turn shapes social organisation.

The idea that technology is socially constructed is now generally accepted by historians of technology. The social construction of technology uses a multidirectional model where technology is developed through a process of variation and selection in which there are many different possibilities.⁶⁹ In particular it recognises the influences of different social groups. In their *General Introduction to The Social Construction of Technological Systems*, Wiebe Bijker, Thomas Hughes and Trevor Pinch explain how the social constructivist approach allows the Sociology of Scientific Knowledge (SSK) to be extended into technology and incorporates not only objects but the related processes and knowledge.⁷⁰ Pinch and Bijker later use the empirical example of the bicycle to elucidate the main elements of this approach. They show the range of rival variations that were available and why one variant, the Penny-farthing, was chosen over others as a consequence of the perceived problems and the solutions chosen by the different social groups surrounding it.⁷¹ The *Introductory Essay* to Mackenzie and Wajcman's book further provides a good discussion of the issues and problems surrounding the study of technology as a social construct and as having an impact on society.

Hughes' chapter on the *Evolution of Large Technological Systems* defines large technological systems as incorporating organisations, artefacts, science, laws, and books.⁷² The technological system surrounding electricity supply include the electrical supply system, electrical power stations, organisations such as the Central Electricity Board, electrical trade associations, electrical technologies, the science behind electricity, and legislation. The concept of the technological frame, a framework of concepts and techniques that surround technologies, is also introduced by Bijker.⁷³ This highlights how knowledge appertaining to the technological system both social and scientific should be recognised as important. Hughes places the technological systems in a social context and explains the stages in their evolution as they develop and expand. He identifies the phases of invention, development, innovation, transfer and growth, competition and consolidation.⁷⁴ He also highlights that these are not necessarily simply sequential since there is some overlap and backtracking particularly during the phases of invention, development and innovation as technologies are redesigned. Looking

⁶⁸ Mackenzie, D., & Wajcman, J., eds. (1993): p2.

⁶⁹ Pinch & Bijker in Bijker, W.E., et al., eds. (1990): p28.

⁷⁰ Bijker, W.E., et al., eds. (1990): p4.

⁷¹ Pinch & Bijker in Bijker, W.E., et al., eds. (1990): pp29-30.

⁷² Hughes in Bijker, W.E., et al., eds. (1990): p51.

⁷³ Bijker in Bijker, W.E., et al., eds. (1990): p168.

⁷⁴ Hughes in Bijker, W.E., et al., eds. (1990): pp56.

at the use and consumption of technology will, however, be most relevant to the study of technologies in a domestic environment because it is this stage that will reveal most about the consumer's experience of electricity through the choices that they make.

The consumption of electric power and electrical technologies, as I will show in more detail in Chapter 2, has largely been written about from the point of view of the supply industry and manufacturers. The point of consumption has however formed a focus for some studies in the history of technology. Schwartz Cowan's work on the consumption junction looks at the point of consumption.⁷⁵ It focuses on the consumers' position in a social network and how their viewpoint influences choices about technology. It also investigates the impact of this on their decisions about technology since this is the junction at which technology is diffused and begins to have an impact on social structures. The consumer's involvement through choice and the use of appliances emphasises the active nature of the consumption process.

Schwartz Cowan's work draws upon a social constructivist approach to electrical technologies associated with housework, which she describes as tools that have an agency of their own by both defining and limiting the ways in which that can be used and the ways in which housework is organised around them.⁷⁶ There are also a number of other studies that address household technologies. Penny Sparke's work on electrical appliances focuses on the introduction of electrical appliances to the home and tracks how they developed to become an important factor in domestic life.⁷⁷ For example, she looks at specific activities and how the technologies related to them developed such as the development of the iron in connection to laundry. Sparke's work outlines the early history of domestic technologies and is a useful starting point for looking at the history of specific domestic technologies in more detail. She highlights areas such as interest groups in the development of domestic technologies that should be taken into consideration in my own research.

An important concept that arises in the literature in relation to users and technology is how the interpretive flexibility of technologies often leads to them being used in a way that differs to some degree from the use for which they were designed. The idea of interpretive flexibility is particularly associated with social constructivist approaches to technology and highlights how technology is shaped by the interests and choices of different social groups. Wajcman also highlights a useful and interesting point about the indeterminacy of technology and the idea that technology does not necessarily fulfil the purpose for which it was intended.

⁷⁵ Schwartz Cowan, R., in Bijker, W.E., et al., eds. (1990): p262.

⁷⁶ Schwartz Cowan, R., (1983): p9.

⁷⁷ Sparke, P., (1987). See also Yarwood, D., (1990): pp902-948.

The 2003 collection of papers edited by Nelly Oudshoorn and Trevor Pinch, aims to examine the user's role in the development of technologies and how they 'consume, modify, domesticate, design, reconfigure and resist technologies'.⁷⁸ It also reinforces the idea that interpretive flexibility allows the user to have an influence on the use and constructed meaning of different technologies. Hilton also recognises the way consumers 'appropriate, mediate and reject the dominant meanings of goods'.⁷⁹ He draws upon the work of Michel de Certeau, who sees the active interaction between consumers and products as an explanation of how consumption is a process of cultural production. Wajcman believes that there is both a positive and a negative impact on women from unintended consequences of new technologies. As such it is the social context, in which, the technology is embedded that determine its meaning.⁸⁰ For example, in the home women used the telephone, which was originally conceived as a technology to facilitate business, as a means of overcoming their isolation.⁸¹ The user's experience of the broader technological system may also vary from what was intended due to changes in social attitudes. For example James Vernon's 2005 paper, on techno-politics of school dinners in Britain, shows how the public viewed school dinners in a way that had not been intended when the technological system surrounding them was implemented. This was because they were associated with the social stigma of the charity soup kitchen.⁸² Miller discusses the impact that material culture can have on both the space it inhabits and through its ability to transgress institutional limits. In this way consumption can be used as an instrument to resolve and express the different aspects of an object's identity.⁸³

When looking at the users of technology there are also a number of studies that highlight issues of governmentality in relation to the technologies and their systems. This is the idea that social, political or technological systems determine the ways in which we behave. Vernon's paper highlights such ideas of governmentality, providing an example of how technology can impact on behaviour.⁸⁴ Specifically he discusses how the implementation of school dinners instilled ideas about the correct behaviour at meal times. In relation to technology as a means of informing the behaviour and understanding of the user, Cowan offers the explanation that technologies are not passive instruments but that they affect the likely and possible ways in which the people using them will behave.⁸⁵ In respect to domestic

⁷⁸ Oudshoorn, N. & Pinch, T., ed. (2003): p1.

⁷⁹ Hilton, M., (2003): p8.

⁸⁰ Wajcman in Jasenoff, S., et al., eds. (1995): pp199-200.

⁸¹ Oudshoorn, N. & Pinch, T., ed. (2003).

⁸² Vernon, J., (2005): p720.

⁸³ Miller, D., ed. (1998): p7-17.

⁸⁴ Vernon, J., (2005).

⁸⁵ Schwartz Cowan, R., (1983).

work, among other forms, the tools that are available for use affect what can and can't be done. In respect to housework Cowan claims these are mediated by the choice of related social institutions, such as manufacturing firms.⁸⁶ Sparke similarly identifies her dominant theme as 'the role that domestic appliances have played in communicating a particular set of values to their users who are, for the most part, women'.⁸⁷ For example, the development and use of electric refrigerators may determine how foodstuffs are stored and have an influence on shopping practices, as well as reinforcing the importance of food hygiene in the home and the role of the housewife in maintaining the health of the family through its use.

Taking into account these approaches to history of technology, I will focus on the marketing and consumption of specific electrical appliances to explore the fluid relationships between industry, technology and the consumer as they are constructed, enacted and resisted within various domestic spaces in the home between 1927 and 1960. The literature on gender and technology in the home is helpful to my study because domestic technologies were often designed and marketed by men for consumption by women.

1.5. Gender and Technology

Throughout the studies on domestic consumption, housework and domestic electrical technologies, there is often an assumed gender distinction in the consumption of electrical appliances in the 'feminized' domestic sphere. In this penultimate section I will look at the relationships between gender, technology and the home to show gendered differences in consumption and how power relationships were enacted through domestic technologies.

I have already discussed the construction of the housewife as the consumer and user of electrical technologies in the home. Feminist accounts of technology and the social understandings that surround it are useful when looking at the influence of technology on roles within the home, particularly with respect to gender differences. There are many examples of how technology shapes the definition of the user in the literature, most notably in feminist discussions of how technology helps to define gender relations and the concepts of femininity and masculinity. Cockburn and Ormrod consider both the impact of technology on gender relations and how ideas related to gender shape the technology itself. They specifically note issues of representation, highlighting how the meanings we give to technology create differences in attitudes within society.⁸⁸ As such there are socially constructed differences

⁸⁶ Schwartz Cowan, R., (1983): pp9-11.

⁸⁷ Sparke, P., (1987): p6.

⁸⁸ Cockburn, C. & Ormrod, S., (1993): p1.

between men and women in relation to technology.⁸⁹ Similarly Cynthia Cockburn and Ruza First-Dilic looked at the interrelationships between gender and technology throughout the life history of different technologies.⁹⁰ The studies contained within it look at how definitions of gender and technology mutually shape each other and how women as the user actively help to shape different technologies.

Alongside the effect of domestic technology on the amount of time spent on housework and the gender bias seen in new domestic technologies, the effect of gender specialisation of housework has been important for feminist authors.⁹¹ The impact of technologies on the gendered division of labour can also shed some light on how technology had an impact on the home environment. It is the feminist arguments in relation to the gendered division of labour both in household work and labour outside of the home that has been most developed.⁹² In studies on the role of women in the household there is a consensus that technology has not helped to enhance women's role or change traditional understandings of the status of the housewife. Mackenzie and Wajcman claim that '...domestic technology has reinforced the gender division of labour and locked women more firmly into their traditional roles.'⁹³ Many electrical technologies had their origins in commercial, industrial or military contexts and were adapted for domestic use with little consideration for the housewife and housework.⁹⁴ Despite the technical ability of women when using household appliances, such technologies have not helped to enhance or change women's identity.⁹⁵ In her paper on 'The industrial revolution in the home' (1993), Cowan claims that the industrial revolution in the home had led to structural changes in housework that weren't accompanied by similar changes in attitudes to housewives as a labour force.⁹⁶ In addition Cowan discusses how individual choices allowed this partial industrialization.⁹⁷ Moyra Doorly also claims that, at the turn of the twentieth century, feminists believed that the inequalities between men and women are founded in and promoted by the economic exploitation of women by men. This argument was built around the separation of domestic and industrial work and the unpaid nature of housework.⁹⁸ Since men play a greater role in the design and production of

⁸⁹ Cockburn, C. & Ormrod, S., (1993): p5

⁹⁰ Cockburn, C & Furst-Dilic, R., (1994).

⁹¹ Wajcman in Jasanoff, S., et al., eds. (1995): p196.

⁹² McGaw, J., (1982): pp798-828.

⁹³ Mackenzie, D & Wajcman, J., eds. (1993): p178.

⁹⁴ Wajcman in Jasanoff, S., et al., eds. (1995): p198.

⁹⁵ Wajcman, J., (1991).

⁹⁶ Schwartz Cowan in Mackenzie, D & Wajcman, J., eds. (1993): pp186-188; Cockburn, C. & Ormrod, S. (1993): pp12-13.

⁹⁷ Schwartz Cowan, R., (1983).

⁹⁸ Doorly in Mackenzie, D & Wajcman, J., eds. (1993): p219.

technology, it is argued by Cockburn and Ormrod that they use technology to enhance their position of dominance.⁹⁹

Feminist accounts have also considered the division of labour in the production of domestic technologies outside of the home. Cockburn and Ormrod's discussion of the division of labour in the production and distribution of microwave ovens highlights how gender differences reflect perceived differences in the types of knowledge possessed. Women are seen as having a greater knowledge of cooking so home economists in the test kitchen tended to be female, whilst men were considered to have greater technical knowledge and tended to be involved in the engineering aspects.¹⁰⁰ Their arguments in relation to these gender inequalities in the division of labour often focused on inequalities in the workplace that weren't necessarily specific to the technology. Cockburn also claims that the reason women are not entering into technological roles is not because they are incapable of doing them but because of the social attitudes surrounding gender and technology.¹⁰¹

The commercial and industrial processes involved in the development of domestic technologies can also provide information about how consumers' experiences feed back into the design. An example might be how the position of women in production and distribution, through roles such as 'home economist'¹⁰², enables them to influence these processes and reflect their experiences in the home. This example shows how technology is both shaped by and helps to shape the user, and that these interactions should both be taken into account in order to develop a complete understanding of the relationship between them.

Understanding the gendered nature of housework and the dichotomy between men as manufacturers and marketers of electrical appliances with female consumers and users is crucial to my study of the consumption of domestic electricity but it is important to recognise that gender distinctions are not finite and inflexible but that boundaries between gender roles are individual to different households and alter in different social contexts. For example (as I shall show in Chapter 5), unemployment in the 1930s led to greater male participation in the home. Despite the fact that gender is such an important element to the study of electrical appliances in any domestic context, it is not the intention of this thesis to actively develop or engage with the literature on gender roles and technology in the home. It is instead predominantly concerned with the construction and consumption of ideals of electricity and modernity, and with exploring the material presence and use of new electrical technologies

⁹⁹ Cockburn, C. & Ormrod, S., (1993): p32.

¹⁰⁰ Cockburn, C. & Ormrod, S., (1993): p55.

¹⁰¹ Cockburn in Mackenzie, D & Wajcman, J., eds. (1993).

¹⁰² Cockburn, C. & Ormrod, S., (1993).

within British homes. As well as being informed by the literature and historiographical approaches I have discussed so far, I will draw upon historical geography, material culture studies and oral history methodologies in order to frame my research.

1.6. Methodology

The scope of this thesis and range of secondary literature that must necessarily be drawn upon required an inter-disciplinary approach to the study of electrical consumables. It is necessary to incorporate a variety of sources from government publications, industry publications and trade material, consumer magazines, specialist and popular journals, diaries and autobiographies, oral histories and material culture. In what follows I will discuss the use of historical geographical approaches of spatiality, material culture studies on the use of artefacts as historical sources and the use of oral histories from anthropology that all contributed towards my methodology.

Spatiality

As I have mentioned already the consumption of domestic technologies is situated in the various and unique spaces of private and individual homes. Electrical technologies thus interact with the home both physically by their presence and use, but also ideologically in constructions of the ideal modern home and their representation of modernity, and social attitudes and values. Since domestic space is so essential to the context of the consumption of electricity I will outline some theories of spatiality. I will consider its application in historical geography approaches to space that have influenced my approach to the inter-relationships between individuals, electrical technologies and domestic space.

Spatiality is a tool that has become increasingly prevalent in historical geography and more recent historiography of science and technology. It allows one to draw a distinction between physical spaces or 'place' and the more abstract concept of social spaces. John Agnew defines place as particular and experiential in contrast to space which is abstract and governed by the meanings with which it is infused. Despite these differences space and place cannot be separated from each other completely.¹⁰³ Understanding the differences between space and place facilitates a greater appreciation of the social relationships and understandings that occur contemporarily within a specific place and a specific social space.

¹⁰³ Agnew, J. In Cloke, P. & Johnston, R., (2005).

The focus thus becomes the nature of the space, how it was constructed and the values it embodies, and understandings of the practices that occur within it. Any description of spatiality would not be complete without reference to Henri Lefebvre whose work is dominant within the literature on space. In his book *The Production of Space* he develops the idea that space is produced and reproduced through human agency and that this is both limited and influenced by the space itself, sometimes yielding unintended consequences. Space is geometrically defined as an empty area but social space doesn't fit this idea since it is imbued with meanings through the nature of practices that occur within it, and the social interactions and identities of those inhabiting it.¹⁰⁴ Lefebvre conceives of three different types of space.¹⁰⁵ The first of these is spaces of spatial practice, by which Lefebvre means lived space, for example the activities that occur within a space. The second type is representations of space. In this type, a space is conceived of and represented, incorporating the knowledge and codes of behaviour that are connected with a space. For example the construction of the ideal modern kitchen and its representation in advertising and displays as a space in which the preservation of cleanliness and hygiene by the housewife is paramount. This also includes the concept of governmentality and how people's behaviour within a space is directed by outside influences. The final form of space is defined by Lefebvre as representational spaces. Central to this form of understanding social space is how space is perceived and the symbolism that is assigned to it. For example adverts create an aesthetic space around the commodity that they represent, symbolising modernity.¹⁰⁶ Understanding these different types of space will aid an exploration of the contrasts between representations of electrical technologies and individual experiences in specific domestic contexts.

Theories of spatiality link well with Sociology of Scientific Knowledge, as they can be applied to help explain why one interpretation succeeds over another as a consequence of external social or historical circumstances.¹⁰⁷ More specifically to my own work it is an approach that can allow a discussion of how social structures determine the knowledge and practices associated with electrical technologies within the context of the home. It can thus provide a useful framework for accessing the interactions between electrical appliances, the user, their environment and the knowledge associated with specific household tasks.

The application of spatiality and ideas about the way physical spaces and social behaviour mutually construct and reconstruct each other is not an ahistorical approach when

¹⁰⁴ Lefebvre, H., (1996): p1; p3

¹⁰⁵ Lefebvre, H., (1996): p33.

¹⁰⁶ Wicke, J. (1988) *Advertising Fictions*. Cited in Outka, E., (2005): p316.

¹⁰⁷ See the work of Finnegan, D.A., (2008): p371.

looking back at the turn of the twentieth century. Social thinkers such as John Ruskin and later Patrick Geddes believed that spatial form could change social structure. They applied this belief to urban planning but the home was a space that was resistant to this, its private nature making it slow to change. Judy Attfield's study on the adoption of open plan in home design illustrates how individuals often adapted the open plan space imposed by architects in the mid-twentieth century to preserve behaviours associated with traditional room divisions. 'Modernity in this context was expressed through the adaptability with which families constructed and reconstructed their surroundings to fit in with their changing lifestyles rather than passively accepting the aesthetic styles the design experts tried to impose upon them.'¹⁰⁸ Another study that uses the concept of spatiality to explore the way in which occupants reclaim domestic space in opposition to outside influences is Thomas Foster's work on the use of domesticity in the women's modernist writing at the turn of the century. He sees the space of the home as specifically privatised and feminised during the late nineteenth century in reaction to industrial capitalism outside of the home. As I shall discuss in Chapter 5, in the mid-twentieth century unemployment and the creation of suburban estates contributed to greater male participation in domesticity. Mona Domosh in her work on gender and the geography of the home views cultural stories about spaces in the home as articulating shifts in the gender and social identities of those using domestic spaces.¹⁰⁹

Foster further extends the gendered nature of domestic space to explain that 'This reading of domesticity depends upon accepting the public/private distinction as the basis for creating an alternative feminine culture, built on values excluded from the capitalist market place.'¹¹⁰ There is a body of literature dedicated to understanding the distinction between public and private spaces in relation to the home. Peter Steinberger equates the term private with family and household and public with all influences outside of these units.¹¹¹ However this separation of the public and domestic spheres is in Foster's view complicated by government involvement in municipal housing schemes. It is also belied by the work of Ruth Schwartz Cowan arguing for the industrialization for the home and the invasion of industrial principles to the organization and management of the home. In addition the rise of the home as a centre for consumption in the early twentieth century blurs the boundaries between public and private, since individuals consume public products and ideas in their homes. The impact of

¹⁰⁸ Attfield, J. In Cieraad, I., ed. (1999): p78.

¹⁰⁹ Domosh, M., (1998): p277.

¹¹⁰ Foster, T., (2002): p7.

¹¹¹ Steinberger, P., (1999): p293.

mass media with the development of the radio and later television should also not be underestimated in clouding the dichotomy between public and private.

All of the examples mentioned so far involve the invasion of the ‘public’ in terms of the agency of political and economic influences and ideas, into the ‘private’ but Mona Domosh also demonstrates how there was a movement of private values into the public sphere as well. She states that ‘...when we move out of the house and on to the streets, our identities are constantly being monitored, judged, constituted, negotiated and represented’.¹¹² Janet Floyd refers to the postmodern idea that boundaries are fluid and comments that domestic space as well as influencing the identities and social status of individuals outside of the home is ‘...both responsive to continuous interventions from ‘outside’ and shaped by agents whose identities are themselves in flux.’¹¹³ Alison Blunt and Ann Varby consider how studies of the home in cultural geography have now moved away from distinctions between public and private to focus on the relationships between domestic space and individual identity:

Moving beyond the separation of public and private spheres, current research on the home is often concerned with mobile geographies of dwelling, the political significance of domesticity, intimacy and privacy, and the ways in which ideas of home invoke a sense of place, belonging or alienation that is intimately tied to a sense of self.¹¹⁴

Domestic space has a symbiotic relationship with the inhabitants in terms of how they mutually construct and reconstruct their individual natures. In my work I want to consider how electrical technologies mediate this process by looking at how their use defines the electrical nature of the domestic environment at different times and how this in turn defines the social status and role of the user.

The literature in historical geography largely employs spatiality from a social perspective, how it was constructed and the values that it embodies. I will be using electrical technologies and their social construction within the social space of the home as a means of unpicking the complex relationships between the electrical industry, the domestic consumer, the home and electrical technologies in the use and understanding of space. A spatial approach to the consumer experience of domestic electricity allows electrical technologies to be easily situated within the wider contexts of both the technological systems to which they belong and the domestic environment in which they are used. When looking at spaces in the

¹¹² Domosh, M., (1998): p280.

¹¹³ Floyd, J., (2004): p61.

¹¹⁴ Blunt, A. & Varley, A., (2004): p3.

home, the existing literature often focuses on spaces as bounded within specific rooms or socially determined boundaries rather than spaces associated with different activities, as I will do. The application of spatiality through material culture has not been discussed within the existing literature on electricity and electrical appliances. It can provide an informative insight into the actual experiences of the consumer within both the physical and social space of the home.

Artefacts as historical sources

The use of artefacts, being man-made objects, as a source material has most commonly characterised the disciplines of archaeology and cultural anthropology but in the last three decades greater attention has been shown by historians to the value of objects as historical sources. A number of edited collections of essays have been published to discuss the relative advantages, the limitations and the appropriate methodologies of employing artefacts as sources.

Historian William Hesseltine, in an essay on the challenge of the artefact, stated in 1989 that 'Artifacts are historical facts, and as facts they should be as meaningful to the historian as the facts derived by the internal criticism of literary remains.'¹¹⁵ In his statement Hesseltine places artefacts alongside written sources in their value and treatment by historians. In their introduction to *History from Things: Essays on Material Culture*, Lubar and Kingery describe artefacts as, 'remnants of the environment of earlier periods, a portion of the historical experience available for direct observation.'¹¹⁶ They see the use of artefacts as lending rhetorical support to historical arguments but as different from written sources in the sensory experience they provide. Jules David Prown further adds to this by claiming that material culture is a physical manifestation of the cultural values and beliefs of the society in which they were produced and can be used to discover 'values, ideas, attitudes, and assumptions'.¹¹⁷ He sees the experience as both sensual and intellectual. Similarly Karen Harvey in her guide to history and material culture raises the importance of experience in the use of material culture, 'Material culture is not simply objects that people make, use and throw away, it is an integral part of - and indeed shapes – human experience.'¹¹⁸ In Lubar and

¹¹⁵ Hesseltine, W. B. In Schlereth, T., ed. (1989): p100

¹¹⁶ Lubar, S. & Kingery, W.D., ed. (1993): pix.

¹¹⁷ Prown, J. D. In Lubar, S. & Kingery, W.D., ed. (1993): p1. These 'values, ideas, attitudes and assumptions' reflect only the intentions of the maker and user, which may be in support of social beliefs of context of production or a reaction against them in some way.

¹¹⁸ Harvey, K., ed. (2009): p3.

Kingery's definition of artefacts above it is also implied that history can be re-experienced through 'direct observation' using artefacts. The emphasis placed on experience by historians and those who study material culture highlights the active nature of objects, not only in their original context but also as active agents in how they are interpreted as historical sources. Karen Harvey sums this up in the following manner, 'Through their very materiality –their shape, function, decoration and so on – they have a role to play in creating and shaping experiences, identities and relationships.'¹¹⁹ The materiality of artefacts and the experiential nature of them as an historical source offered important insights for my research about their use. I spent several hours examining and handling electrical domestic technologies contained in the collections at the Science Museum, London to understand their physical properties. For example the difference in the weight of early electric irons and later forms that incorporated the new technology of Bakelite. It also gave an opportunity to look for signs of wear and tear that might indicate excessive use in a particular manner or problems with design. The objects at the museum are however subject to problems of collection, many were donated or collected for reasons that are unclear or unspecified in the associated written record and thus they cannot be considered representative of electrical technologies in use in British homes.

Within the definition of what constitutes material culture there is not always consensus about the inclusion of art. Prown sees art as an expression of belief and thus as a part of the material culture of any society.¹²⁰ Within this I would include imagery used in advertising as a form of art and thus material culture expressing the aspirational social ideals associated with consumption at that time.

Historians of material culture agree that the use of artefacts as a historical source, like any source which we draw upon, has a changing symbolic value in different contexts and among different audiences.¹²¹ Karin Dannehl brings our attention to the challenge posed by the multiple contexts surrounding objects, particularly when it is an everyday object:

If an everyday object is defined by being inconspicuous, then what are we to do on those occasions when they do appear - for example, in a comment by a diarist or as an artefact in a museum display.¹²²

We must be careful not to place our own cultural values upon the object and its interpretation. In addition objects must be used critically when considered as an historical source since they

¹¹⁹ Harvey, K., ed. (2009): p5.

¹²⁰ Prown, J. D. In Lubar, S. & Kingery, W.D., ed. (1993): p6.

¹²¹ Lubar, S. & Kingery, W.D., ed. (1993).

¹²² Dannehl, K. In Harvey, K., ed. (2009): p127.

have the potential to be misleading, and even possibly fake.¹²³ As a consequence of the context specific nature of these sources, the most valuable information that can be garnered for them is often found where the documentary record is incomplete but there are corroboratory documentary sources that relate to the object and its use in some manner. It is also helpful to consider the relationship between objects and the other artefacts with which it interacted/interacts.¹²⁴ For example, in Chapter 4 I will show the relationship between vacuum cleaners and furnishings in the home that they were used to clean. The addition of design features, such as revolving bars and different attachments in turn enabled different furnishings to be more thoroughly cleaned.

There are a couple of essays that look particularly at technological artefacts as historical sources as opposed to ornamental artefacts.¹²⁵ In his work on material culture Bernard Herman distinguished between object-centred studies focusing on technological development and object-driven studies that look for evidence of social relationships.¹²⁶ Robert B Gordon in his essay on technological objects takes this further by identifying these as two important steps in the interpretation of a technical artefact: intrinsic characteristics or physical properties (how it is made and used) and context or origins and environment of use.¹²⁷ An alternative approach to the study of objects is outlined in Karin Dannehl's work, which defines the difference between object biographies and life cycle studies. She states that when a complete object biography is not possible due to gaps in the documentation a life cycle method is more useful, as it employs snapshots of significant events in the life history of the object.¹²⁸

When looking at various electrical technologies throughout my thesis I am focusing on the stages of distribution and consumption of the life cycle within this definition. Karen Harvey has pinpointed the focus of historical interest in material culture as being the process of consumption, by which she means the use of objects. As such the focus is on change rather than on persisting practices.¹²⁹ The numerous forms of electrical appliance for domestic use and the scarcity of archival information for individual manufacturers raised problems in developing complete and informative object biographies within the scope of this thesis. A focus on consumption in the home raises questions such as how did the consumption of domestic electrical technologies change existing practices within the home. I will consider this

¹²³ Washburn, W.E. In Schlereth, T., ed. (1989): p108.

¹²⁴ Lubar, S. & Kingery, W.D., ed. (1993): xvi.

¹²⁵ All artefacts are technological to some degree in the way that they were manufactured and used.

¹²⁶ Harvey, K., ed. (2009): p2.

¹²⁷ Gordon, R. B. In Lubar, S. & Kingery, W.D., ed. (1993): pp76-80.

¹²⁸ Dannehl, K. In Harvey, K., ed. (2009): p128.

¹²⁹ Harvey, K., ed. (2009): pp8-9.

question in relation to how the use and meanings of space in the home were altered by the introduction of electrical appliances throughout the thesis.

Using oral history

Oral histories are a valuable source for accessing the undocumented experiences of individuals in their own words. As part of my research I conducted seven oral history interviews with both female and male participants to investigate their use of electricity in the home prior to 1960. The majority of these participants were recruited by word of mouth and a couple were recruited through an event at the Museum of Science and Industry, Manchester. All the interviews took place in a location chosen by the participants, who were allowed to have a family member or friend present. The interview process was fully explained with an opportunity to ask questions and the appropriate consents were obtained. I chose to pursue the use of oral histories as they are particularly useful in garnering information about the working class experiences that are not represented elsewhere.¹³⁰ Whilst there are some documented autobiographies written by working class individuals these often describe their life in service and give greater detail about the daily routines and practices in the homes of their employers than their own homes.

The nature of memory is complex and it is something that is continually altered as it is constructed, reconstructed and recalled. Among scholars who have studied the complexities of working with memory there is a general agreement that memory is an intellectual construction. Richard Werbner takes this description further by portraying the many processes involved in creating, defining and determining the transformation of memory. He states that, ‘These are the processes by which memory lives, gets realised or ruptured, is textualised, becomes buried, repressed or avoided, has its effects, and is itself more or less transformed.’¹³¹ As people get older their perceptions alter, and affect the way in which they look back on and recall memories. Later life experiences might affect the importance they place on specific memories and how memories are reconstructed.

Memories are also influenced by the social frameworks in which they are created and recalled. Maurice Halbwachs states in his work on collective memory that memory is generally recalled in association with other individuals or a specific related social milieu.¹³² For Werbner,

¹³⁰ Six out of the seven participants were from a working class background and the other one was from a middle class family.

¹³¹ Werbner, R., (1998): p2. See also Thompson, P., (2000); Perks, R., ed. (1998).

¹³² Halbwachs, M., (1950): p40.

who sees memory as much more dynamic, Halbwachs' notion of memory is too simplistic and reduces memory to 'a backwards construction after the fact.'¹³³ As well as being transformed through the environment in which memories are created and recalled, oral history testimonies are also interpreted through my own experiences and understanding. The living nature of memory should be considered when using oral history evidence and reinforces how sources should not be used in isolation.

1.7. Conclusion

In order to demonstrate the lived reality of consuming domestic electricity against industry constructions of ideal representations of electrical appliances consumed within the space of the ideal modern home, I have chosen to organise my research along the basis of different spheres of household activity (cleaning , food preparation and production, leisure and personal care), that demonstrate different ways in which electrical appliances were linked with constructions of modernity within the home across the period between 1926 and 1960. In all the chapters that follow I will counterpose examples of lived realities with the modern ideal in representations of electrical technologies in the home. In light of the review of literature above the thesis will address how the electrical industry constructed ideal modern domestic spaces in which electric technologies were depicted and exhibited; how the industry constructed the housewife consumer and who else consumed domestic electrical technologies; to what extent these ideals were realised through the consumption of electrical technologies in different domestic contexts, specifically class differences; and what were the relationships between electrical technologies, the user and the domestic spaces in which they were used?

Each chapter will draw upon two case studies, introduced below, that were in use within the specific domestic space addressed and/or highlight a specific aspect of the consumption of electrical technologies in British homes. For instance, technologies that offer insights on the impact of electricity on the use of domestic space, class patterns of consumption, and gender differences in design and advertising. In addition each chapter focuses on different chronological periods that overlap but are roughly sequential across the thesis. Furthermore the case studies demonstrate how different ideals of modernity and domesticity were constructed around specific appliances at different times as they became

¹³³ Werbner, R., (1998): p2.

popular consumer items and stabilised on the consumer market to become commonplace, only to be replaced by the latest modern appliance.

In order to set the scene for the consumption of electricity in the home I will open Chapter 2 with a description and discussion of the development of the national grid across Britain (in competition with gas supply) and a history of modern architecture and social housing in Britain. I will describe how different homes were adapted for electricity (if it all) or designed to accommodate the necessary infrastructure. I will introduce the tariffs and meters used by consumers, rates for costs of using electricity in the home, and the practicalities of plugs and sockets. An understanding of the infrastructure and technological system of electricity supply is important since it is a system with which consumers constantly interact when using electrical lighting and appliances within the home and upon which that use is dependent.

Chapter 3 considers appliances associated with cleanliness during the 1920s that move around the whole house and thus focuses on the fluidity of space and how it is transformed in the moment of use. I will begin with a case study of electric irons, as the first widely used electrical appliances in the home that were used in the laundering of clothes to facilitate an outward presentation of a moral and respectable family. The ideal that a clean home was a modern home was a constructed ideal perpetuated by architects and home designers and was accompanied by increasing standards of cleanliness that housewives were expected to achieve. I will discuss the decline in servants and appliances as a means of preserving social status. I will use a case study of vacuum cleaners to explore the relationship between home design, home furnishings, and vacuum cleaners. And I will consider how vacuum cleaners were marketed as facilitating the ability of housewives to meet rising standards of cleanliness.

In chapter 4, the focus will be on the 1930s kitchen as the centre of food preparation and production in the home. Developing the themes of Chapter 2 on home design and competition between gas and electricity I will begin this chapter with a description of the ‘ideal’ modern kitchen and the cooker as an example of the tensions inherent in the shift between gas and electricity supply as the source of domestic power. The persistence in a preference for gas cooking and thus the persistence in gas supply alongside electricity is an illustration of the complex relationship and interplay between the two competing industries. In the second half of the chapter I will introduce the case study of a new technology – the refrigerator – and how there was a need for manufacturers to generate and exploit the potential consumer market. I will introduce the concept of consumer choice in greater detail

and discuss how consumers were courted by the industry through the creation of a notion of hygienic modernity.

Chapter 5 is organised around the home as a space of family leisure in the 1930s and 1940s. I will introduce and discuss in more detail the concept of domesticity and gender differences in understandings of the home and how these changed as the home became increasingly a centre of leisure. Using a case study of electrical toys, I will illustrate the reappropriation of social spaces into electrical spaces of leisure. I will also consider the increasing participation of men in domesticity. The second half of the chapter will focus on developing a case study of radios and gender differences in the location and form of their use within the home across the period under study in the thesis. Whilst radios arrived on the consumer market very early in the development of electricity the use of mains power in their operation and attempts to make their design commensurable with the furnishings of the domestic space did not occur until around 1930 when the radio became increasingly represented as the centre of family leisure within the modern home.

In the final chapter, on personal care, I will describe the ideal modern middleclass bathroom of the 1950s and discuss the emergence of the bathroom as a dedicated space for personal hygiene and care. In light of safety concerns that emerged around electricity in the bathroom I will consider alternative spaces that were accommodated for the purposes of personal care. I will explore the use of electric hairdryers and other accessories in aspirations to modern fashions and the ability to emulate high society hairstyles and fashion within the home as a comment on class differences. Contrasting the lived reality with the construction of the dressing table space shows how some individuals chose to continue the practice of drying their hair by the open fire or in the warmth of the kitchen rather than using a hairdryer. Finally I will look at a case study of the use of electric shavers in the bathroom and gendered marketing tactics as well as considering the introduction of regulations in response to electrical accidents and the implications this had for the bathroom as an electrical space and as a space of personal care.

The thesis will demonstrate that there was a vast gap between the constructed ideals of modernity that the electrical industry presented, in relation to the home and electrical appliances, and the lived realities of consumers in individual domestic contexts. The ability to aspire to modern ideals was restricted by the availability and affordability of electricity supply and electrical technologies, and by the form of existing domestic spaces. The next chapter will outline the development of the electricity supply industry for domestic consumption and establish the context within which electrical domestic technologies were consumed.

Chapter 2

Supply

I don't know what electricity is, and cannot define it – I have spent my life on it. I do not know the limit of electricity but it will go beyond anything we conceive of today.¹³⁴

Lord Kelvin, 1901.

So said Lord Kelvin in a speech at the official opening of the Neptune Bank power station in Newcastle in 1901. The Newcastle-upon-Tyne Electric Supply Company was by the 1910s 'the biggest integrated power system in Europe at this time',¹³⁵ although this was short lived as mainland Europe and America took the lead in systems of electricity supply. In Britain there was not a comprehensive plan for national supply until 1926. Lord Kelvin's statement within this context is rather futuristic in his projections of the scientific and commercial possibilities of electricity. The context of the speech at the opening of one of the earliest commercial power stations also suggests the future commercial possibilities of electricity as a source of domestic power. In this chapter I will provide a history and historiography of the development of a national system of electricity supply including the technical, political, economic, and social factors that directed its trajectory. This history of electricity supply in Britain will provide a background and context to understanding the electrical nature of the home environment within which individuals were consuming electrical appliances.

Electric power in the form of electric light had been available for domestic use in a minority of upper class households since 1878 through the use of private generators. Lord Armstrong was the first to install electric arc lighting in his home, Cragside in Northumberland, followed shortly after by a more extensive scheme of incandescent lamps.¹³⁶ Electrically powered household appliances became available on the market in small numbers in the 1890s, but in the absence of a network of electricity supply, remained elite consumer items confined to those homes able to sustain their own generators. The development of a national system of electricity supply created an infrastructure that could support the development and mass

¹³⁴ Quoted in The Electricity Council, (1982): p22. See also Hannah, L., (1979): p2.

¹³⁵ Hannah, L., (1979): p33.

¹³⁶ The National Trust, (1992): p20, p22.

consumption of electrical domestic technologies, which in turn generated greater demand for electricity supply.

In this chapter I will begin by drawing upon the existing historiography to outline how electricity was generated, transmitted and distributed to domestic consumers. I will look at the supply of electricity on both a national and a local level taking into account urban and rural differences. Secondly, I will consider competition between the gas and electricity industries for domestic consumers of power. Thirdly, in order to examine more thoroughly the contextual framework within which the consumption of electricity was embedded, I want to consider the developments in British housing that occurred in the early twentieth century and the relationship between electricity and British homes, both old and new. These predominantly historiographical sections will provide a background for my empirical work on electricity supply that focuses on the point of consumption in the home. Thus, fourthly, I will describe the infrastructure of wiring, sockets and plugs that were essential for the use of electricity in the individual home and with which the consumer had direct contact. This final section will also consider how organisations such as the Electrical Association for Women (EAW) aimed to educate the consumer about this infrastructure as the end-point for the use of the technological system of electricity supply in the environment of the home and the varying degrees of understandings that existed within the British population, despite these efforts. This chapter will show that there was not a uniform adoption of electricity supply but that the national system of supply exhibited a disparate and chaotic pattern of growth determined by regional contexts and consumer demand.

2.1. The National "Grid"

The development of the national grid from its inception in 1925, its construction spanning the following ten to fifteen years and its later extensions, bought electrical power to the masses. Its final structure as a system of supply must be understood in the context of its historical development. Drawing upon the existing historiography I will outline the developments in the electrical supply industry prior to 1925, before looking at the planning and implementation of a national system in the form of the Grid. I will pay particular attention to who was the consumer of electricity at each of these stages and the regional and social variation in supply and consumption. First I want to introduce some of the historiography on large technological systems of power supply, to help inform an understanding of why the national grid developed in the way that it did.

Social constructivist approaches to technology, including technological systems such as power supply systems, consider technologies as the product of a process of variation and selection.¹³⁷ Thomas Hughes' social constructivist approach to the early development of electricity supply in his book *Networks of Power* considers how systems or networks of electrical supply are both shaped by and shape the society that constructs them. He does this through a consideration of different spheres of human activity that impact upon the creation and development of these networks; technical, scientific, economic, politic and organisational. Furthermore Hughes notes that the contextual elements of regional electrical power systems were shaped by the technical characteristics of the systems themselves. His comparative study looks for basic differences in the processes involved in the construction of power networks that indicate broader social differences to show how the social context impacts upon technological development. For Hughes 'the factors complexly and systematically interact with technology and with one another.'¹³⁸ Leslie Hannah, who also conducted a study of the early electrical supply industry in *Electricity before Nationalisation*, similarly considers the development of the Grid to be founded in the existing technological infrastructure. Existing local power stations, often located in and around the large urban centres, were extended and linked, their size and location determining how the Grid was organised on a national level, as opposed to the development of a completely new system.¹³⁹ Unlike Hughes however he takes an economic approach and focuses more heavily on the distribution of electricity and the politics of nationalisation. The purpose of the following survey of the development of the electrical supply industry and related literature is to highlight the number of national, local and individual interests influencing the nature and direction of the development of the Grid.

The electricity supply industry in Britain before 1925

The early expansion of the Electrical Supply Industry in Britain was disparate and disorganised, and exhibited various degrees of regional and social variations. Having led the way in the development of electric power at the end of the nineteenth century, second to America, Britain lagged behind both America and Europe in the construction and growth of its supply industry in the first two decades of the twentieth century. Prior to World War One the electricity supply industry was focused upon providing electrical power in large urban centres,

¹³⁷ Bijker, W.E., Hughes, T.P., & Pinch, T.J., eds. (1990).

¹³⁸ Hughes, T.P., (1983): p405.

¹³⁹ Hannah, L., (1979).

for instance Manchester, London, Newcastle and Birmingham.¹⁴⁰ At this time the supply of electricity in rural districts was primarily ‘a luxury for the very few who were wealthy enough to own private plants.’¹⁴¹ There were some exceptions to this general trend. An example is Lyme Regis in Dorset, a small country town that was electrified in 1909 as a consequence of the entrepreneurship of landowner Alban Woodroffe.¹⁴² Whilst there were localised systems of supply in some regions, electricity remained a commodity of the wealthier classes in both urban and rural settings. Individual private companies and municipal undertakings each had their own generating station, which led to numerous small and inefficient stations opening up across the country. The result of the development of numerous individually owned generating stations was both an uneven distribution of power stations centred on the urban concentrations, and a large regional variation in current, voltage and frequency of transmission.¹⁴³ In 1913 a *Report on London Electricity Supply* on behalf of London County Council was undertaken. It illustrates the huge diversity in systems of generation and transmission that existed in London alone, where there were seventy generating stations working at various capacities and linked to various supply systems that differed in frequency, voltages and cost.¹⁴⁴ The lack of standardisation as a consequence of the variety of municipal and private undertakings made a national system of supply and standardisation problematic.

These conditions were the consequence of the political, technical, industrial, commercial and individual interests of the individuals and institutions involved in the early and continuing development of electricity supply. In the opinion of Hughes the variety of private and municipal undertakings led to the involvement of a complex array of administrative units and different political organisations with vested interests. His view is not unfounded and was commonly expressed by individuals during the 1920s.¹⁴⁵ The early expansion of electricity supply was described in 1927 by George. S. Francis in an article for *The Electrical Age* as ‘parochial and chaotic’.¹⁴⁶ He also recognised the reason for this state of affairs as having its foundations in the varied organisations involved in supply. H. H. Ballin, an economic historian

¹⁴⁰ See Frost, R., (1993) for an example of early urban electrification; Hughes, T.P. (1983): p85.

¹⁴¹ Partridge, M. M., (1928) ‘How Electricity is Supplied to Rural Districts’ in *The Electrical Age* 1(8): p301.

¹⁴² Greene, M.R., (2006).

¹⁴³ See the existing literature on the early electricity supply industry in which there is a consensus on the early state of disorganisation. However historians vary in their emphasis on the different factors influencing the way in which the electricity supply industry developed. Ballin, H.H., (1946); Hannah, L., (1979); Hughes, T.P., (1983).

¹⁴⁴ The Electricity Council, (1982).

¹⁴⁵ This will be further illustrated in the following section in relation to the individuals involved in the planning and implementation of the Grid.

¹⁴⁶ Francis, G., (1927) ‘The Electrical Development of Great Britain’ in *The Electrical Age* 1(3): p115. *The Electrical Age* was a publication of the Electrical Association for Women which will be discussed later in this chapter.

writing about electricity supply in 1946, offered a further explanation for this confused state of electricity supply. He viewed the development of such a variety of different systems of supply as the result of the variation in technical opinions by those instigating them and as generating problems for later attempts at standardisation.¹⁴⁷ His basis for this conclusion is possibly to be found in his reliance upon evidence from technical and specialised electrical journals. The variation in local supplies and the impact of different interest groups posed a problem for the further development of electricity supply and later would have implications for the nationalisation of an inter-connected system of supply, a fact recognised in journals, government reports and newspapers alike.

Faced with the problem of how to organise the generation, transmission and distribution of electricity supply in Britain in 1917 the Board of Trade set up an Electric Power Supply Committee. The Committee was chaired by Sir Archibald Williamson (1860-1931) and aimed to ‘... ensure that there should be an adequate and economical supply of electric power available for all classes of consumer, particularly industries which depended upon cheap supplies of power for their development.’¹⁴⁸ Thus the main consumers of electric power at this time were viewed by the Committee to be industrial consumers as opposed to domestic. The report of the committee concluded that generating larger amounts of power in fewer stations would lead to the production of much cheaper electricity.¹⁴⁹ The suggestions in this report published in 1918 led directly to the 1919 Electricity (Supply) Act. As we shall see later the increasing availability of cheap electricity helped to encourage a greater degree of domestic consumption of electricity from the 1919 Act onwards.

The Electric Power Supply Committee report also came to the conclusion that creating a central authority to regulate the generation and distribution of electricity, ‘The Electricity Commissioners’ would improve the supply. Sir Archibald Page (1875-1949) was among those appointed to the role of an electricity commissioner as a consequence of his experience with the problems of transmission and distribution that he acquired as deputy manager for the Clyde Valley Electric Power Company.¹⁵⁰ He described the main role of the Electricity Commissioners as being ‘to regulate and promote the generation and distribution of electricity in accordance with modern ideas.’¹⁵¹ Yet, the power of these Electricity Commissioners in enforcing national development was limited. This was largely because the reorganisation

¹⁴⁷ Ballin, H.H., (1946): p21.

¹⁴⁸ Quoted in The Electricity Council, (1982): p27.

¹⁴⁹ Page, Sir. A., (1932) ‘From Grid to Home’ In *The Electrical Age* 2(9): p362.

¹⁵⁰ Marshall, C.W., (2004) ‘Page, Sir Archibald (1875-1949)’ In *Oxford Dictionary of National Biography*, Online Edition.

[<http://www.oxforddnb.com/view/article/35349>, accessed 18 Feb 2012].

¹⁵¹ Page, Sir. A., (1932) ‘From Grid to Home’ In *The Electrical Age* 2(9): p363.

proposed by this act was voluntary in nature. In fact, Ballin observed that the Act was most popular as it signified that private interests had won over attempts to take public control of the industry in these early attempts to reorganise the industry.¹⁵² Conversely, Hannah claims that the apparent victory of private interests was simply a 'stay of execution.'¹⁵³ Either way local interest had at this time more sway than national and technical considerations.

In the same year as the 1919 act was passed, the Electrical Development Association (EDA) was formed to '...produce advertising material of common value to bodies within the industry'.¹⁵⁴ Such trade associations played an important role in negotiations within their associated industry as well as between the industry and their consumers.¹⁵⁵ Within this definition of a trade association the EDA can be seen as performing an intermediary function between the electricity supply industry and its consumers, allowing exchange of information and monitoring activities surrounding the relationships between the industry and its consumers. However an alternative interpretation of the role of the EDA is offered by Bill Luckin. He considers the EDA to be a 'public relations organisation'¹⁵⁶ as opposed to a trade association, placing a focus on their roles in propaganda rather than as an association for industrial and consumer liaison. Further to this the financial support for the EDA came from manufacturers and later the Central Electricity Board which meant that it was in effect controlled by the electricity supply industry. Consequently, as noted by Elizabeth Sprenger and Pauline Webb, it was the interests of the supplier rather than the consumer that were represented by the EDA.¹⁵⁷ At the time of the EDA's inception the nascent electricity supply industry was only reaching a limited number of domestic consumers and an association devoted to promoting the adoption of electrical power would have been invaluable in encouraging its development through the promotion of electrical propaganda. The material produced by the EDA indicates industry attitudes and understandings of the domestic consumer including their perceived needs and wants. The presence of servants in many of their advertising materials prior to the 1930s suggests that the consumer of domestic electricity was still perceived to be from the upper and upper-middle classes of society. The

¹⁵² Ballin, H.H., (1946): 158.

¹⁵³ Hannah, L., (1979).

¹⁵⁴ Sprenger, E. & Webb, P., (1993): p59.

¹⁵⁵ The work of Geddes and Bussey on the role of trade organisations in the radio industry provides a good example of the role of trade organisations in mediating between the interests of the industry and the consumer. Geddes, K. & Bussey, G., (1991): pp62-63.

¹⁵⁶ Luckin, B., (1990): p3. Luckin also includes the Electrical Association for Women in this description. The EAW will be introduced in detail later in this chapter.

¹⁵⁷ Sprenger, E. & Webb, P., (1993): p61.

EDA perpetuated a technocratic vision emphasising the wonders of modern technology, but as yet this was a vision that was limited to the upper classes.

Despite the disjointed and exclusive nature of electrical supply and the apparently limited success of the 1919 Electricity Supply Act, the foundations had been laid for a national system of supply and control.

The 1926 Electricity (Supply) Act

The limited reorganisation of the electricity supply industry in the wake of the 1919 Electricity (Supply) Act and the firm belief held by many of its instigators in the importance of an interconnected system of supply, led to further measures. After a series of unsuccessful attempts to amend the Act, a small Committee was set up in 1925 under Viscount William Douglas Weir (1877-1959) to consider the nationalisation of electricity supply. Weir had previously sat on a number of governmental committees and according to biographer Richard Davenport-Hines was not shy of recommending state intervention in place of unsuccessful private capitalism.¹⁵⁸ Charles Hesterman Merz (1874-1940), a well-known contemporary electrical engineer, who had long believed in the economic benefits of an interconnected power supply system, presented a technical report to Weir's committee. In it he outlined the concept of the national grid.¹⁵⁹ Using this information the Weir Report laid the foundations for the contents of the Electricity (Supply) Act of the following year.¹⁶⁰

It was the 1926 Electricity (Supply) Act that introduced the beginning of effective national co-ordination. It brought into being the Central Electricity Board that had the power to plan, construct and operate what was to be termed the 'Grid'. The Central Electricity Board was chaired by Sir Andrew Duncan (1884-1952), who thus also became managing director of the Grid.¹⁶¹ It was his reputation as an arbitrator in situations where conflicting capital interests were involved that gained him the post, a useful skill in encouraging the co-operation of the numerous and diverse local electrical undertakings. His position in this role was further enhanced by his insistence on the Central Electricity Board having autonomy in the

¹⁵⁸ Davenport-Hines, R., (2004) 'Weir, William Douglas, first Viscount Weir (1877-1959)' In *Oxford Dictionary of National Biography*, Online Edition, May 2009.

[<http://www.oxforddnb.com/view/article/36818>, accessed 19 Feb 2012]

¹⁵⁹ Redmayne, R.A.S., (2004) 'Merz, Charles Hesterman (1874-1940)' in *Oxford Dictionary of National Biography*, Online Edition, Jan 2011.

[<http://www.oxforddnb.com/view/article/34999>, accessed 18 Feb 2012]

¹⁶⁰ Page, Sir. A., (1932) 'From Grid to Home' In *The Electrical Age* 2(9): p363.

¹⁶¹ Hughes, T.P., (1983): p354.

management of the Grid outside of direct government control.¹⁶² Sir Andrew Duncan was helped and later succeeded by Sir Archibald Page.

The 1926 Electricity (Supply) Act aimed to concentrate the generation of electricity in a small number of stations connected up to form a national grid.¹⁶³ Demand in locations distant from the generating station could thus be satisfied through a system of transmission. In the words of Sir Archibald Page, who later wrote about the aims of the national grid for *The Electrical Age* in 1932:

... concentration of the generation of electricity for the country as a whole under unified control in a relatively small number of modern and efficient stations so interconnected, constructed and operated as to obtain the maximum economy and provide the supply industry with its "raw material" at rock bottom cost.¹⁶⁴

Economy in the construction of the supply system would reduce the costs of electricity for the consumer and so promote its use. The 1926 Act included provision for the interconnection of existing and future distribution systems. The Weir report of 1925 considered 58 power stations would be adequate to supply electricity across Britain but in the end the Central Electricity Board chose to select 135 for inclusion in the Grid.¹⁶⁵

A different stance on this decision was taken in a newspaper report for the *Financial Times* on 28th November 1927, in which it was reported that the delay in reorganisation that followed the passing of the 1926 Act presented the possibility of a shortage of generating stations.¹⁶⁶ As the construction of the national grid progressed a later article for the same paper dated 15th January 1930 viewed the reduced number of generating stations allowed by the Grid as an advantage in terms of cost, 'The reduction in the number of generating stations must in itself considerably cheapen the price at which supplies can be drawn from the bulk stations.'¹⁶⁷ The variation in opinions expressed in these newspapers demonstrates the diversity of views about the relative success of the Grid and a lack of uniform support for its development. Bill Luckin's work exploring the relationships between the development of the

¹⁶² Grieves, K., (2004) 'Duncan, Sir Andrew Rae (1884-1952)', In *Oxford Dictionary of National Biography*, Online Edition, Oct 2009
[<http://www.oxforddnb.com/view/article/32929>, accessed 18 Feb 2012].

The degree of independence he achieved is outlined in Hannah, L., (1979): p108.

¹⁶³ 1926 (167) Electricity (supply). A bill [as amended by Standing Committee C] to amend the law with respect to the supply of electricity. Clause 4: pp3-4.

¹⁶⁴ Page, Sir. A., (1932) 'From Grid to Home' In *The Electrical Age* 2(9): p363.

¹⁶⁵ Page, Sir. A., (1932) 'From Grid to Home' In *The Electrical Age* 2(9): p363.

¹⁶⁶ 'National Supply and Industrial Problems', *Financial Times*, 28th November 1927: p11.

¹⁶⁷ 'Electricity Plan Complete', *Financial Times*, 15th January 1930: p6.

national grid, small-scale politics and both social and environmental interests views the construction of the Grid as triggering a conflict between what he terms traditionalists and triumphalists in relation to rural electricity supplies. Luckin uses his examination of these relationships to show how the development of the national grid and electricity power supply in some localities encountered more opposition than was previously acknowledged by historians. Triumphalism built upon the solid upper and middle class values of its proponents encouraged enthusiasm for the development of electrical power and the benefits it would bring, whilst traditionalists opposed pylons and the development of transmission systems that would be damaging to the environment and destroy the aesthetic of the countryside.¹⁶⁸ Nye criticises Luckin's work for not fully exploring how the technology of generation affected the economics of distribution and its consequent impact on differences in supply.¹⁶⁹ Luckin does however examine the debate around the construction of pylons for distribution and the environmental and aesthetic objections to their installation. Hannah sees such objections as being tempered by those who saw pylons as part of the modern future.¹⁷⁰ Reactions to plans for the national grid were not uniformly positive but included various degrees of opposition from different interest groups.

The main concern of the Central Electricity Board after 1926 was the production side of electricity supply. Distribution and sales remained under the control of the various local undertakings during the early years of the construction of the national grid.¹⁷¹ The distribution of electricity provision provides a useful background for understanding the distribution of the consumption of electrical appliances, since their use was conditional on access to electrical power. Regional and social variations apparent in the use of electrical appliances are linked to similar variations in the supply of electrical power at any given time. Agricultural electrification was a problem that was not catered for within the 1926 Electricity (Supply) Act and additional legislation was required to deal with it.¹⁷² In a more favourable light it could be viewed in such a way that the un-provisioned areas offered scope for future electrical expansion. Yet, the question of rural electrification was increasingly a concern of the electrical authorities. Rural electrification had both social and political implications. It would not only enhance generation of electricity but a large number of rural consumers were industrial as opposed to domestic.¹⁷³ The 1930s saw an increased focus on the problems of distribution over generation such that,

¹⁶⁸ Luckin, B., (1990); Coppersmith, J., (1992): pp393-395.

¹⁶⁹ Nye, D. E., (1992): pp378-379.

¹⁷⁰ Hannah, L., (1979): p118.

¹⁷¹ Page, Sir. A., (1932) 'From Grid to Home' In *The Electrical Age* 2(9): p362.

¹⁷² 'National Supply and Industrial Problems', *Financial Times*, 28th November 1927: p11.

¹⁷³ Ballin, H.H., (1946): p231.

as Hannah notes, it accounted for more than half the capital expenditure by the industry.¹⁷⁴ Sir Archibald Page outlined how the stations would be connected by 4,000 miles of transmission lines. Despite some opposition from those who believed transmission lines would damage the countryside, financially and technically, it was not considered that there was another option.¹⁷⁵ ‘To develop Rural Supply by means of an Underground System of Transmission and Distribution would call for such a heavy expenditure that to cover interest charges alone, it would be impossible to quote terms for current which would be a commercial proposition to the average consumer.’¹⁷⁶ Transmission was conducted at a higher voltage than the standard 230 V but was reduced by ‘sub-stations’ or transformers before being delivered to domestic premises.¹⁷⁷ A clause within the Electricity (supply) Bill of 1926 allowed for the removal of trees and hedges that obstructed or interfered with the construction, maintenance and functioning of any transmission lines.¹⁷⁸ Transmission lines and the construction of pylons became a contention between protagonists of the Grid and its environmentalist opponents, as already mentioned above.

Despite some opposition, the Grid system was largely considered a success by the Electricity Council and in the media. In two separate reports on the development of the electricity supply industry in the *Financial Times* during the year 1930 it was claimed that the initial achievements of the Central Electricity Board were ‘...an example of scientific co-ordination of electricity supply which is now being copied by every industrial country in the world.’¹⁷⁹ In 1932 Sir Archibald Page identified that only 4.25 million out of a possible 11 million customers were using electricity in their homes.¹⁸⁰ A Survey in 1934 demonstrated that out of a possible 12 million domestic consumers only 4.2 million used electricity.¹⁸¹ By 1935 the grid was reportedly fully commercially operational and by 1939 a rural supply of domestic electricity was available in all villages with 500 or more inhabitants, which corresponded to approximately two thirds of rural premises being connected.¹⁸² However, rural electrification was an expensive undertaking as a consequence of the small number of potential consumers. The rural population was in many areas too small and widely spread delaying the possibility of

¹⁷⁴ Hannah, L., (1979): p234.

¹⁷⁵ Page, Sir. A., (1932) ‘From Grid to Home’ In *The Electrical Age* 2(9): p366.

¹⁷⁶ Anon., (1929) ‘Progress in Rural Electrification’ in *The Electrical Age*, 1(11): p426.

¹⁷⁷ Thwaites, A., (1930) ‘Rural Electrification in Yorkshire’ in *The Electrical Age* 2: p144.

¹⁷⁸ 1926 (167) Electricity (supply). A bill [as amended by Standing Committee C] to amend the law with respect to the supply of electricity. Clause 32: p25.

¹⁷⁹ ‘Electrical Progress and the National Scheme’, *Financial Times*, 8th April 1930: p9; ‘Electricity’s new era’, *Financial Times* 17th April 1930: p8.

¹⁸⁰ Page, Sir. A., (1932) ‘From Grid to Home’ In *The Electrical Age* 2(9): p366.

¹⁸¹ Ballin, H.H., (1946): p229.

¹⁸² Ballin, H.H., (1946): p232. Statistics taken from *Electrical Review* (1943) 132: p607.

a universal distribution of electricity supply. Historians agree in their accounts of the electricity supply in Britain that the construction of the Grid did ultimately reduce the production costs of electricity.¹⁸³ As Hannah puts it, the construction of the national grid:

...was, on the whole, a happy experience and one with which the industry would be well pleased. In the space of fifteen years between 1925 and 1940 the national grid system enabled the British Supply undertakings to overcome their previous lag in development and inaugurate a vigorous expansion of sales based on low prices for the consumer. By the late 1930s Britain's electricity consumption per head of population equalled that in countries with similar income levels.¹⁸⁴

It was not until 1948, however, that all private and municipal undertakings were bought under complete national ownership.¹⁸⁵ In addition rural electrification progressed slowly although Government plans aimed to supply rural areas as fast as possible. Plans as late as 1953 provided for the connection of 85% of farms by 1963.¹⁸⁶ The contrast between progress in rural as opposed to urban areas highlights how local social, economic, and political issues are as significant as those on a national scale in influencing how the electricity supply industry developed during the first half of the twentieth century.

The late 1930s and the 1940s, as well as seeing the implementation of a fully operational national grid system, were also a time during which attention was turned to the standardisation of electricity supply. Below I will look briefly at how the supply industry was standardised on a national level to encourage both continued development and consumption through a more uniform provision of electricity.

Standardisation of electricity supply

Having put the plans for the Grid into place, the Electricity Commissioners turned their attention to the standardisation of current, voltage and frequency. Hughes has acknowledged in his work that the implementation of standardization was difficult in Britain due to the diversity of small-scale technology that already existed.¹⁸⁷ The consequent lack of uniformity of distribution was a hindrance to the full interconnection of electrical supply. Furthermore it was

¹⁸³ See Historiography in footnotes on p40.

¹⁸⁴ Hannah, L., In Supple, B., ed. (1977) *Essays in British Business History* (Oxford: Clarendon Press): pp224-225. Quoted in Hughes. T.P., (1983).

¹⁸⁵ Hannah, L., (1979): p329.

¹⁸⁶ The Electricity Council, (1982): p48.

¹⁸⁷ Hughes, T.P., (1983): p357.

problematic for manufacturers of appliances and their consumers. In his study of electricity supply Ballin described the problematic nature of this situation, which ‘... made an interconnection of distribution networks impossible, increased the cost of equipment and appliances, necessitated large stocks of lamps and apparatus to be held by manufacturers and wholesalers and deterred customers contemplating a change of residence, from purchasing electrical equipment.’¹⁸⁸ Current, voltage and frequency all needed to be standardised to improve the situation for manufacturers and consumers alike.

Alternating current was considered by electrical engineers to be superior to direct current but in 1937 1.12 million out of 9.36 million consumers were still receiving direct current supplies.¹⁸⁹ The provision of a direct current by some generating stations can be viewed as a form of reverse salient within Hughes’ understanding of the development of technological systems. This is because it was developed and employed until it became problematic due to high costs and an alternative approach of using alternating current was developed. In Britain, the Chelsea Electricity Supply Company for example, distributed direct current for forty years and only switched to the more economical alternating current when the national grid was standardised in 1928.¹⁹⁰ Both alternating and direct current remained in use alongside each other for many years despite standardisation efforts.

There were 43 different declared voltages in use in 1928, ranging between 100V and 480V, despite the fact that 230V was considered the standard.¹⁹¹ The voltage took longer to standardise than type of current, not occurring until the mid-1940s. Following an investigation into the most suitable standard voltage the Minister of Fuel and Power presented the conclusions of the Electricity Commissioners to the House of Commons on 12th December 1946, stating that ‘...the most practicable and economical method of obtaining complete standardisation of low voltage alternating current supplies at one voltage would be to adopt 240 volts as the standard...’¹⁹² 240V was made a mandatory condition of any new system built after 1 October 1947. It was of little advantage financially to the private undertakings that remained in operation prior to 1948 to standardise voltage and current, which is why progress was slow. Melanie Unwin’s work comments on the variety of power supply to the home during the early years of electrical supply and its effect on manufacturers and consumers.¹⁹³ One repercussion she notes was that local advertising necessarily stated the type of current and

¹⁸⁸ Ballin, H.H., (1946): p242.

¹⁸⁹ Ballin, H.H., (1946): p242.

¹⁹⁰ Hughes, T.P., (1983): p85.

¹⁹¹ Ballin, H.H., (1946): p242.

¹⁹² The Electricity Council, (1982): p41.

¹⁹³ Unwin, M., (1997): p227.

voltage required by an appliance. Consumers needed to be aware of this when purchasing new appliances and the lack of standardization imposed restrictions on their choice of product.

The standard frequency adopted by the Central Electricity Board for the grid was 50Hz, the standard European Frequency. It was considered desirable by the Board that this standard be adopted for efficient generation and as a measure to serve future interests.¹⁹⁴ It took 25 years or so to complete the process of standardisation and to convert the ¾ million direct current consumers as well as 2 ½ million non-standard alternating current users to the standard alternating current at a voltage of 240V.¹⁹⁵

A number of conclusions about the domestic consumption of electricity can be drawn from the history of electricity supply in Britain between 1900 and 1960. First, there were a variety of industrial, political, and social interest groups involved in the development of electricity supply as a technological system outside of British homes. Their impact upon the directions in which the supply industry developed give them some agency in the domestic consumption of electricity and determining who had access to electricity in their home through availability and affordability. Second, it shows that there was a complicated relationship between the construction of a domestic market for electricity by the industry and the impact of domestic demand on the extension of electricity supply. Third, there were large regional and social variations in the electrical consumer throughout the first half of the twentieth century. For the majority of this period it was mainly the upper and middle classes who had access to electricity supply in their homes, but this social distinction also varied locally. Finally, the technical variations that persisted in the form of electricity supply were problematic for the consumer of electrical technologies. The variations in the consumption of electricity are not only linked to electricity supply but also influenced by competition from alternative suppliers of domestic power. In the next section I will develop this point by considering how the electric industry competed with the gas industry to win consumers.

2.2. Competition with the Gas Industry

The development of the electricity supply industry cannot be understood on a national or local level without consideration of its competition with the gas industry. This section will outline the competition between the electricity and gas industries for consumers through price and advertising campaigns between 1920 and 1960.

¹⁹⁴ Page, Sir. A., (1932) 'From Grid to Home' In *The Electrical Age* 2(9): p363.

¹⁹⁵ The Electricity Council, (1982): p41.

Early competition occurred over lighting on the streets and in the home. In Manchester the use of electric street lighting over gas was not uniform until after the Second World War, when the gas lamplighter disappeared from the street.¹⁹⁶ The gas industry responded to competition in the home by developing the incandescent mantle, but despite this electric light was brighter, safer and cheaper. As we have already seen there were regional variations in the distribution of electricity, but there were also variations in the distribution of electricity in relation to gas supply. The map in Image 2.1. shows the regional differences in gas and electricity supply in relation to the population distribution across Britain. It was produced by the Electric Lamp Manufacturers' Association (ELMA) at some time between its establishment in 1919 as a cartel and later trade union organisation to promote the interests of the private companies it represented and its dissolution prior to the Second World War. ELMA represented a mixture of national and overseas companies that included General Electric Company (GEC), Siemens and British Thomson-Houston (BTH).¹⁹⁷ It is not possible to date the map more specifically but we know from the development of electricity supply before the national grid was completed that electricity supply was, at least until 1927, mainly consumed by the minority of upper and upper-middle class households with access to supplies from local undertakings. Thus as might be expected the map shows that the proportion of households with a gas supply far exceeds those with electricity supply for electric lighting in all regions. However this is a simplistic distinction as there would have been an overlap in some homes where both electricity and gas were supplied. For example, electric lighting might have replaced the gas mantle but gas continued to be used for heating and cooking.

¹⁹⁶ Frost, R., (1993): p23.

¹⁹⁷ See 'Electric Lamp "Combine"', *The Times*, 17th March, 1920: p11; and 'Electric Lamp profits', *The Times*, 17th March, 1920: p16.

ELECTRICITY AND GAS MAP OF GREAT BRITAIN.



Image 2.1. Electricity and Gas map of Great Britain, c.1920-1935.¹⁹⁸

¹⁹⁸ Map produced by the Electric Lamp Manufacturer' Association (ELMA) at some time between 1919 and the start of World War Two. ELMA, (c.1919-1935) *Electricity and Gas Map of Great Britain* (Scheff Publicity Organisation Ltd) In Papers relating to electricity supply in the care of Science Museum London.

Despite the benefits of electric lighting gas initially remained a commercially and culturally attractive option for the provision of power.¹⁹⁹ Commercially, the technological infrastructure for the provision of gas to the home was already well established in homes at the turn of the century and remained cheaper than electricity before a national supply reduced electrical costs. Between 1910 and 1939, the prices of coal and gas remained static.²⁰⁰ Yet, in a private memorandum of the EDA, the reliable nature of electricity as a constant quality consumed at a quantifiable rate is shown to be a benefit of electricity over gas in terms of predicting costs. Gas, which was sold by the 'Therm' was less accurate than the electric unit in estimations of the costs of its use. This is because the rate of consumption of gas was variable depending on the conditions and manner in which gas was used.²⁰¹ Culturally, incandescent electric light bulbs were bright and offered a sharp contrast to the gentle and localised glow of the gas mantle, which people were accustomed to in their homes. Electric light was incommensurable with the cultural construction of the home to which it was introduced.²⁰² Yet, in the 1930s as competition between the two industries intensified, greater demand for electricity led to the cheaper production of electricity and meant gas became relatively more expensive.²⁰³

The cheaper cost of electricity also helped to generate greater demand, further reducing costs, in a self-perpetuating cycle that continued until the levels of electricity supply plateaued in the mid-twentieth century. Whilst only 32% of homes had been wired for electricity in 1931, this figure rose steadily reaching 65% in 1938 and by 1961, 96% of homes were wired for the provision of electricity supply.²⁰⁴ This was made possible through the gradual construction of the infrastructure of national supply in the form of the national grid. In order to create demand and facilitate this process the electrical industry needed to produce advertising that would encourage consumption. Electrical advertising of the 1930s most commonly makes the claim that electricity was cheaper, cleaner and more efficient than gas as a source of power, a theme that will recur throughout the thesis. There are numerous examples of trade material, articles and advice literature that were used in advertising and promoting the adoption of electricity in the public domain. Electricity Council Films such as *Prelude to Prosperity* showcased the technical expertise behind the Grid, whilst other examples like *Well I Never* or *Twas on a Monday Morning* (1946), demonstrated the benefits of

¹⁹⁹ Luckin, B., (1990): p3.

²⁰⁰ Forty, A., (1979) 'The Electric Home' In Cross, N. & Steadman, P., (1979): p41.

²⁰¹ EDA (1922) 'Selling Gas By the Therm' In Papers relating to electricity supply in the care of Science Museum London.

²⁰² Schivelbusch, W., (1995).

²⁰³ Goodall, F., (1999): p164.

²⁰⁴ Corley, T. A. B., (1966): p19.

electricity to the housewife consumer.²⁰⁵ It was concerns about public understandings that had bought into being the EDA, mentioned earlier and the EAW (introduced below) to mediate between industry and the public and circulate propaganda material.

As an alternative to gas, the electricity industry went to great lengths to stress not only the benefits of electricity but to reconcile it with domestic values by demonstrating its safety. Early enthusiasm for electricity was quickly tempered by concerns about electrical safety. Luckin notes how, ‘It was especially difficult to counter the claim, often made by the gas and coal industries and by perspective purchasers, that electricity was exceptionally dangerous.’²⁰⁶ Electrical safety raised questions about how you control something that cannot be seen or touched. Greene notes that ‘...most regarded electricity with some anxiety, like the ancient Greek God Electron and his wife the Goddess Zappata, it was invisible, mysterious and could kill you.’²⁰⁷ Graeme Gooday explores how the industry made the new technology of electricity unthreatening to the existing domestic values, considering both rhetorical and technological solutions to the domestication of electricity.²⁰⁸ Gooday, in particular, considers concerns exhibited over electrical safety as linked to the question of its identity. Visual depictions in the form of personifications of electricity, ‘to some extent filled the void left by householders’ largely unanswered demands to know what it was that they would be consuming if they bought it into the home.²⁰⁹ The anthropomorphism of electricity as an electrical wizard or fairy was one way of turning the invisible power source into an acceptable form for domestic consumers. This tactic was adopted in a publication aimed at children by the EAW entitled *The Rays: A Fairy Story* to promote confidence in electricity as a friend and helper.²¹⁰ An early film to promote electricity was entitled *Wizard in the Wall* and describes electricity as genie that was changing the world.²¹¹ The anthropomorphism of electricity was reproduced across a variety of different media in attempts to sell electricity as a new source of power.

The Gas Supply Industry fought back with propaganda material of its own. They adopted the friendly personification of ‘Mr Therm’ to promote gas.²¹² The Gas Supply Industry also produced an array of trade material and advertising in response to the challenge from

²⁰⁵ Science Museum Collections, *Prelude to Prosperity* (n.d); Science Museum Collections, *Well I Never* (n.d); BFI Archive (1946) *Twas on a Monday Morning*.

²⁰⁶ Luckin, B., (1990): p13.

²⁰⁷ Greene, M.R., (2006): p124.

²⁰⁸ Gooday, G., (2008): p118.

²⁰⁹ Gooday, G., (2008): p216.

²¹⁰ IET Archives. NAEST 33/2.11.17. Smith, C. F., (n.d.) *The Rays: A Fairy Story* (EAW Publication).

²¹¹ Science Museum Collections (Film) *Wizard in the Wall* (n.d.).

²¹² Gooday, G., (2008): p207.

electricity. Image 2.2. below from *The Gas World* in 1935 was accompanied by the slogan that, 'No gas undertaking can afford to rely upon the consumer taking the initiative.'²¹³

February 2, 1935—*The Gas World*

105

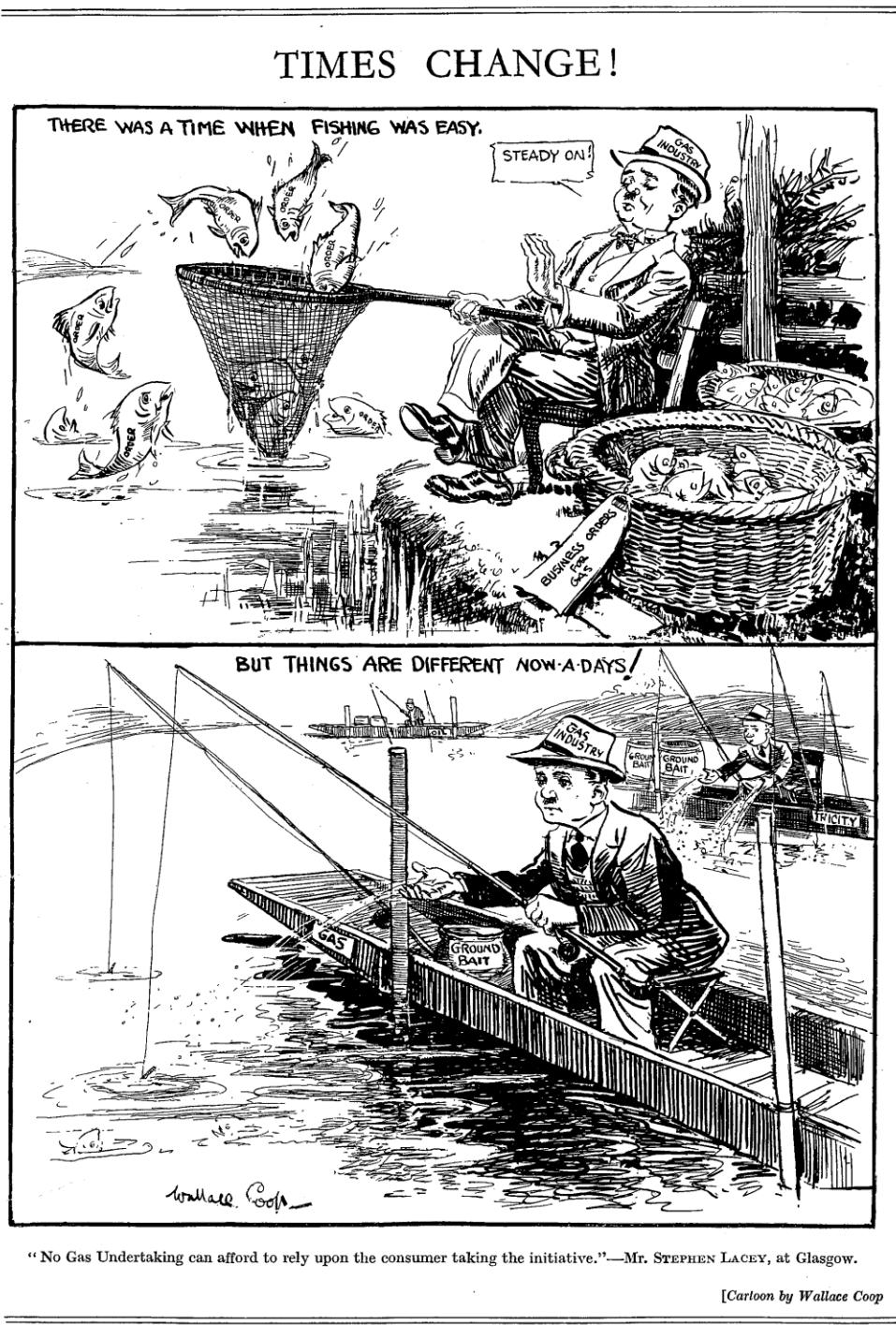


Image 2.2. Times Change, in *The Gas World*, 1935.²¹⁴

²¹³ Coop, W., (1935) 'Times Change' In *The Gas World*, February: p105.

²¹⁴ Coop, W., (1935) 'Times Change' In *The Gas World*, February: p105.

The message in this cartoon was that the Gas Industry had to actively persuade customers to use Gas in the face of competition from electricity and oil.

The development of the gas industry in the face of competition from electrical supply companies was a reaction to the success of electric lighting and advertising conveyed anti-electric messages. The EDA did not take the potential impact of this anti-electric propaganda too seriously since it considered the momentum of the electrical industry to be sufficient to carry it through.²¹⁵ An example of propaganda from the British Gas Council, is the commissioned publication of a beautifully illustrated book by Compton Mackenzie, a well-known author at the time, in 1947 entitled *The Vital Flame* to promote gas. In it Mackenzie outlines the history of gas supply and its benefits over electricity. For example he demonstrates the economic benefits produced through the use of by-products from gas power that are not available with electricity.²¹⁶ Not only does it promote gas but also makes the claim that electric lighting is both a social and cultural disaster, offering the example of the switch from gas to electric lighting in the theatres, 'As for the stage, it has hardly yet recovered from the disastrous effect on acting which the substitution of electricity for gas caused.'²¹⁷ Ultimately the gas industry had by this time accepted the triumph of electric light over gas but there was still much to fight for in terms of domestic heating and cooking. As a piece of propaganda it is likely that *The Vital Flame* reached a smaller audience than its counterpart film released in 1952²¹⁸, but it portrays gas as both a historically important source of power and as a fuel of the future. At the end of the book Mackenzie finishes by expounding the enthusiasm that animates the gas industry that will carry it through increasing competition from alternative power sources.²¹⁹ In the late 1950s and early 1960s gas would be used in the production of electricity.

The development of electricity supply over the expansion of the gas industry can be explained to a degree by the backing of local government for electricity as the power of the future. Hannah claims that 'From the mid-1920s both private builders and local authority housing departments installed electricity as standard in new houses, if they were within reach of a mains supply.'²²⁰ The situation was undoubtedly more complicated than this, as will be discussed in more detail below, but the gradual tendency for electricity supply to be developed

²¹⁵ EDA, (1926) *Private note to the electrical industry on anti-electric advertising*. In Papers relating to electricity supply in the care of Science Museum London.

²¹⁶ By-products of gas production could be used for paint, nylon, disinfectants, drugs, motor fuel, and plastics. Mackenzie, C., (1947): p26.

²¹⁷ Mackenzie, C., (1947): p17.

²¹⁸ Science Museum Collections, (1952) *The Vital Flame* (A British Gas Council Film)

²¹⁹ Mackenzie, C., (1947): p80.

²²⁰ Hannah, L., (1979): p187.

over gas for domestic use was partly determined by governmental decisions to invest in electricity supply through its building schemes, and also by the acquiescence and even desire of domestic customers to switch to electricity. This was helped by its presentation as 'modern' and without a broad consumer base the development of the national grid and continuing expansion of the electricity supply industry would not have been cost effective to instigate.

Having focused on generation and transmission in the early development of the supply industry, the focus of the Central Electricity Board and Electricity Commissioners shifted to distribution and encouraging domestic consumption, which will be the focus of the final section in this chapter. First I want to consider the variations in the domestic spaces to which electricity was being introduced by looking at modern architecture and British homes throughout the first half of the twentieth century.

2.3. Modern Architecture and British Homes

The development of the electricity supply industry occurred against a backdrop of social reform in housing through interwar slum clearance schemes and national reconstruction after the Second World War. The promotion of electricity supply in local authority designs for municipal housing projects helps to explain why electricity became increasingly popular as a power source in British homes. In this section I will outline the central government plans for social housing schemes to be enacted by local authorities in the inter-war and post war periods. These schemes were sometimes influenced by continental ideas of architectural modernism and as such I will discuss the history of modern architecture in Britain with reference to class differences and how electricity was incorporated into changing house design to understand the interrelationships between the home and electricity supply, both socially and physically.

Social housing schemes and post-war reconstruction

In 1918 the Tudor Walters report laid down recommendations for the form and construction of new houses and the equipment that local authorities should consider when implementing housing projects. Between 1919 and 1939 1 million new council homes were built as part of slum clearance and government schemes to provide affordable housing, yet large swathes of slum properties remained.²²¹ The majority of these new homes took the form three-bedroom

²²¹ Evans, P. & Doyle, P., (2010): p7.

houses for approximately five persons.²²² It was recommended in the 1918 report that restrictions on the building of new houses were relaxed to reduce costs.²²³ Plans and experiments envisioned and conducted prior to the First World War and partially implemented between the wars became a more concrete reality to deal with the post-war housing crisis under the Labour government in 1945. These building programmes advanced the spread of electrification in Britain. In 1944 the post-war reconstruction report *Design of Dwellings* reassessed the recommendations of the Tudor Walters report and outlined government plans for 3-4 million new homes in the following 10-12 years. The opening explanation of the general principles behind the report, stated that 'The last quarter of a century has seen a steady rise in the general standard of living and a growing desire for the appreciation of good housing - in particular, of convenient domestic arrangements and labour-saving fittings.'²²⁴ This suggests not only was the government increasingly aware of a need for good quality housing but rising standards of living meant there was an increasing demand. The rise in building costs in the aftermath of the war were much higher than the rise of living costs making government aims for numbers of new houses unaffordable.²²⁵ From 1945 to 1951 plans for a further 1 million new homes as part of post war reconstruction were put in place. Post war modernization was responsible for the later adoption of electricity as it was increasingly used in newly built housing as standard. It is linked by Graeme Gooday in his work to a desire for a brighter future.²²⁶ The link between modernism and electricity is a theme the industry promoted avidly in their own advertising for electricity and electrical products. In the following section I will look at the influence of architectural modernism on understandings of the home and the form of post-war social housing, into which electricity was introduced.

²²² HMSO, (1944) *Design of Dwellings: Report of the design of dwellings sub-committee of the central housing advisory committee appointed by the Minister of Health and Report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing* (London): p12.

²²³ 1918 [Cd.9191] *Local Government Boards for England and Wales, and Scotland. Report of the committee appointed by the President of the Local Government Board and the Secretary for Scotland to consider questions of building construction in connection with the provision of dwellings for the working classes in England and Wales, and Scotland, and report upon methods of securing economy and despatch in the provision of such dwellings*: p78.

²²⁴ HMSO (1944) *Design of Dwellings: Report of the design of dwellings sub-committee of the central housing advisory committee appointed by the Minister of Health and Report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing* (London): p9.

²²⁵ HMSO (1944) *Design of Dwellings: Report of the design of dwellings sub-committee of the central housing advisory committee appointed by the Minister of Health and Report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing* (London): p32.

²²⁶ Gooday, G., (2008): p219.

Architectural modernism at home and abroad: avant-garde design and social idealism

Modernism in Britain was preceded by the Arts and Crafts Movement led by William Morris (1834-1896) who stated, 'Have nothing in your houses that you do not know to be useful and believe to be beautiful.'²²⁷ The domestic environment was envisioned by those who subscribed to the Arts and crafts Movement as designed to counter the pollution, dirt and crude commercial values of industrialisation.²²⁸ On the continent the Art Noveau movement, based upon the use of nature was more conspicuous at the turn of the century. The early twentieth century witnessed the rise of the International Style in architecture, outlining universal laws of design that defined the modern era and changing understandings of the relationship between the home and technology. The exploration of space was a fundamental component of the International style in architecture, particularly through the technological control of space via structure, lighting, heating and ventilation.²²⁹ In relation to electric lighting as a solution to one of these, historians agree that its introduction to the home had repercussions for interior home design. The bright light prompted muted colours to be used and lampshades became a common feature to soften incandescent lighting.²³⁰

The International Style is most often associated with director of the Bauhaus Walter Gropius (1883-1969), German born Ludwig Mies van der Rohe (1886-1969) and Le Corbusier (1887-1965). Walter Gropius at the Bauhaus was attempting to reconcile tradition with the technology of the modern world within the space of the home. He described the modern home in the following way:

[It]...should derive its architectural significance solely from the vigour and consequence of its own organic proportions. It must be true to itself, logically transparent and virginal of lies and trivialities, as befits a direct affirmation of our contemporary world of mechanisation and rapid transit.²³¹

Le Corbusier, born Charles Edouard Jeanneret, viewed technology as more central in his definition of the home. He asserted that 'a house is a machine for living in'. His work *Towards a New Architecture* was published in England in 1927 and was very influential.²³² Modern architecture can also be seen as a product of new materials that became available for

²²⁷ Quoted in Nuttgens, P., (1988): p9.

²²⁸ Doordan, D. P., (2001): p54.

²²⁹ Nuttgens, P., (1988): p157.

²³⁰ See Schivelbusch, W., (1995): p166; Also Gooday, G., (2008).

²³¹ Quoted in Wilson, E., (1991): p93.

²³² Nuttgens, P., (1988):pp95-99.

structural engineering such as steel and reinforced concrete.²³³ The introduction of electrical supply systems and electrical technologies becomes commensurable with the idea of the modern home within this architectural view of the home as a machine for living in. However, existing homes were resistant to this modern ideal to varying degrees. Elizabeth Wilson in her work on urban architecture and women's roles, *The Sphinx in the City*, claims that the ideas put forward by these individuals altered the shape of the home without fundamentally challenging the function of the home.²³⁴ Technology was introduced in such a way that it was commensurate with existing notions of the private and comfortable home. A greater incorporation of modern technological ideals is not only seen in the work of male architects but is also present in the application of principles of scientific management to the home by prominent female home economists, as I shall show in Chapter 4.

The ideas of Le Corbusier and the Bauhaus architects had some influence on both elite and working class social housing in 1930s Britain. A small number of individual and experimental architectural designs were built and seen as iconic to the modernist movement. Russian born architect Berthold Romanovich Lubetkin (1901-1990) was behind some of these. Following his arrival in Britain in 1931, he established a practice named Tecton, alongside six young Englishmen. Together they pioneered modern design in Britain, his most notable achievements including the Penguin Pool at London Zoo and the High Point Flats in Highgate. William Curtis claims that his designs in relation to the latter incorporated both an adaptation of the ideas of Le Corbusier and the ethos of Soviet collective housing.²³⁵ Curtis also draws attention to the contradictions that were exhibited in the High Point 1 housing between its collectivist principles and its upper middle class use, concluding that, '...the rhetoric was nonetheless clear; these were principles which might later be applied to collective housing on a broader scale.'²³⁶

The modern movement in architectural design was closely intertwined with social idealism.²³⁷ Theories of modernist architecture were incorporated into the design of municipal housing in the form of flats that could provide affordable, comfortable, social housing. The image of the high-rise urban city centre flat was also an ideal of the continental modern movement.²³⁸ William Curtis condemns the inner city blocks of flats that were built to replace

²³³ Nuttgens, P., (1988): p146.

²³⁴ Wilson, E., (1991): p94.

²³⁵ Curtis, W. J. R., (1987): p226.

²³⁶ Curtis, W. J. R., (1987): p226.

²³⁷ Curtis, W. J. R., (1987); Nuttgens, P., (1988); Wilson, E., (1991).

²³⁸ Stevenson, G., (2010): p38.

slums as seeming ‘to embody a particularly modern and hygienic form of alienation.’²³⁹ Despite their lack of popularity the majority of the newly built accommodation in the late 1940s and early 1950s would be flats since, ‘With building materials in short supply, more people could be accommodated in flats, and at less cost, than in houses, and, in the major cities at least, building high-density flats was the only option where space was limited.’²⁴⁰ The 1940s also saw a greater modern influence in terms of the introduction of prefabricated housing, to cope with the shortage of homes following the Blitz. Le Corbusier’s work bought into being on both the continent and in Britain the concept of prefabricated mass produced housing for the middle and working classes. In the 1944 report on the *Design of Dwellings*, entire prefabrication of housing was seen as a viable possibility for future housing.²⁴¹ Architectural historian, Richard Weston sees mass-production as a means of meeting the demands for compact working class houses after the devastation of war.²⁴² For Patrick Nuttgens, prefabricated and mass produced buildings were the ‘product of an industrial society with social concern.’²⁴³ He extends this to add that, what was intended as an expression of democracy came to be viewed as rather one of totalitarianism, representing the arrogant paternalism of those who promoted it. Like Curtis’ comment on High Point above Nuttgens’ identifies the contradictions in the symbolism and actual use of such buildings.

So far I have addressed the impact of modernist ideas in architecture on the homes of the upper and working classes. These ideas also influenced the design of new middle class homes and the electrification of existing houses.

The rise of the middle-class owner occupier

During the inter-war period in Britain, more people became owner-occupiers of their houses. Improved incomes, affordable mortgages and hire purchase schemes meant the lower middle classes could afford their own homes for the first time. The development of suburban areas prospered as the middle classes left Edwardian Terraces behind them and moved further into ‘the country’. The new homes of the 1930s are described by Greg Stevenson as dream homes, providing ‘...a new way of living, with all-electric kitchens, plumbed in bathrooms and

²³⁹ Curtis, W. J. R., (1987): p317.

²⁴⁰ Evans, P. & Doyle, P., (2010): p23.

²⁴¹ HMSO, (1944) *Design of Dwellings: Report of the design of dwellings sub-committee of the central housing advisory committee appointed by the Minister of Health and Report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing* (London): p27.

²⁴² Weston, R., (2002): p43.

²⁴³ Nuttgens, P., (1988): p131.

often a garden of their own.²⁴⁴ Advertisements for the ideal home depicted an ideal way of living into which electricity and electrical appliances was subsumed and which electrical adverts would draw on to promote electricity itself. The design of these ideal homes ranged from 'Tudorbethan'²⁴⁵ style homes to flat roofed modern architecture. It was a watered-down form of continental modernism that was adopted in Britain, the 'moderne'.²⁴⁶ Electric lighting was at this time the standard although a small number of 'all-gas' flats were still being constructed by some local authorities, one example being the Gas Light and Coke Company's financed Kensal House built in 1938 in Ladbroke Grove, London.

Post-war housing shortages and rebuilding continued into the 1950s, as did the continuing belief that better planned housing would produce a better society.²⁴⁷ In 1903 plans for the first Garden city at Letchworth began based upon Ebenezer Howard's (1850-1928) proposal in *Tomorrow: A Peaceful Path to Real Reform* published in 1898.²⁴⁸ It was in the 1950s that further new towns sprang into being, eleven being developed between 1946 and 1955. These included, in date order, Stevenage, Crawley, Aycliffe, Harlow, Hemel Hempstead, Peterlee, Welwyn Garden City, Hatfield, Basildon, Bracknell, and Corby.²⁴⁹ New built houses were smaller and more compact and were increasingly open plan, representing the breakdown in social hierarchies and according to Weston a reduced dependence on servants.²⁵⁰ As I discussed in the Introduction the decline in the availability and affordability was linked to the increasing popularity of electrical technologies as a means for the housewife to achieve socially acceptable standards in her housework without help in the home. This new spatial arrangement within the home was distinctive to modern house design and represented multifunctionality.²⁵¹ Judy Attfield sees open plan design as embodying modernity through notions of adaptability, mobility and change.²⁵² She also describes how many inhabitants reconstructed open plan spaces to recreate superficial room distinctions that represented their personal lifestyle as opposed to being passive consumers of the space as designed by architects.²⁵³ The greater availability and affordability of new household technologies bought electrical technologies within the means of ordinary householders and affected the

²⁴⁴ Stevenson, G., (2010): p4.

²⁴⁵ Stevenson, G., (2010): p15.

²⁴⁶ Stevenson, G., (2010): pp10-16.

²⁴⁷ Leighton, S., (2010): p10.

²⁴⁸ Doordan, D. P., (2001): p3.

²⁴⁹ Leighton, S., (2010): pp10-11.

²⁵⁰ Weston, R., (2002): p34.

²⁵¹ Brindley in Chapman, T. & Hockey, J., (1999): p38.

²⁵² Attfield, J. In Cieraad, I., ed. (1999): p73.

²⁵³ Attfield, J. In Cieraad, I., ed. (1999): p78.

multifunctionality of the house by altering the nature of different spaces through the use of electricity.²⁵⁴

Unlike new forms of housing that could be built with the infrastructure necessary for electricity supply, existing forms of houses needed to be adapted to incorporate supply systems. I will look at the introduction of wiring schemes to aid this below. Existing homes were modernised not only by the introduction and use of electricity and electrical appliances but also in the design and décor of the home. Changes in the design and décor of housing were exhibited annually at the Daily Mail Ideal Home Exhibition, the first of which had been held in 1908. Historians, Tony Chapman and Jenny Hockey see the Ideal Home Exhibition as an arena for imagined representations of the ideal home. They claimed it 'provides interesting insights into the way that big companies attempt to persuade show visitors to subscribe to a particular model of the ideal home.'²⁵⁵ The exhibits demonstrate the technological and social changes that occurred in design and technology for British homes and are a source for changes in the design and ideal use of electrical technologies that can be drawn upon throughout this thesis.²⁵⁶ For instance, the incorporation of streamlining and standardisation into design in the 1930s or the production of utility furniture and appliances in the 1940s as a consequence of a lack of resources and the re-appropriation of what had been wartime industries. However, the audience for the Ideal Home Exhibitions represented a small elite group of upper and upper middle class individuals so can give limited information about the spread of electrical appliances and modern ideals.

The ideal modern home of the popular imagination was one setting for the consumption of electrical technologies. In adapting their homes to incorporate electrical technologies, the choices consumers made about the types and forms of appliances were a means of picking the elements of the ideal modern home that most appealed to their personal identities and aspirations. Having outlined the history of electricity supply and housing in Britain, the last section of this chapter will bring together these two aspects at the point of electrical consumption and look at the infrastructure of supply within the home.

2.4. The Domestic Consumer of Electricity

In the first section of this chapter the focus was very much on the generation and transmission of electricity supply. This last section will focus on the infrastructure of the

²⁵⁴ Leighton, S., (2010): p23

²⁵⁵ Chapman, T. & Hockey, J., (1999): p1.

²⁵⁶ Chapman, T. & Hockey, J., (1999): p5.

consumption of electricity. I will consider how domestic consumption of electricity was promoted by the electrical industry through education and wiring schemes, and the reality of electricity supply in the home. I will also look at some examples of when the supply of domestic electricity failed, which by extension limited the use of electrical technologies in the home.

Encouraging consumption and educating the consumer

Despite its economic advantages, Greene notes that electricity had to be actively sold in locally specific ways in order to convince people of its benefits.²⁵⁷ The intention of developing the national grid was to make the generation and supply of electricity more efficient and thus provide cheaper power. Improving the efficiency of power stations had a limited effect on the price of electricity as it contributed to only a small proportion of the total costs. However, if there was an increase in demand the costs would be spread and prices would drop. This would have a further consequence of stimulating additional consumption. In order to obtain a supply of electricity as a domestic consumer a couple of conditions had to be met, ‘... a single prospective consumer has a right to demand a supply only when a distributing main passes within fifty yards of his premises; and that if he lives some distance away from the nearest main he must get five other prospective consumers to join with him in making a demand.’²⁵⁸ By law the supply authority was bound to supply, to any owner or occupier who met these conditions, a sufficient and reliable supply of electricity. In return the consumer had an obligation to cover any costs of transmission lines that were laid on their property as well as the cost of cable exceeding sixty feet.²⁵⁹ Encouraging the consumption of electricity fell within the remit of the EDA introduced above, but was facilitated by the establishment of the EAW.

The EAW was set up in 1924 with the express purpose of educating women about the benefits of using electricity.²⁶⁰ Caroline Haslett (1895-1957) was appointed Director having already held the position of Secretary for the Women’s Engineering Society (WES). All accounts of the EAW agree that the work of the Association focussed around education, ‘first and foremost’.²⁶¹ The main vector for doing this was the Association’s journal entitled *The Electrical Age for Women*. According to Lenore Symons the two main aims of the EAW were in the areas of the education of women in the safe and efficient use of domestic electricity, and ‘...the

²⁵⁷ Greene, M.R., (2006): p106.

²⁵⁸ Anon., (1932) ‘How to obtain a supply of electricity’ In *The Electrical Age* 2(10): p390.

²⁵⁹ Anon., (1932) ‘How to obtain a supply of electricity’ In *The Electrical Age* 2(10): p389.

²⁶⁰ Symons, L., (1993): p215.

²⁶¹ Pursell, C., (1999): p51.

expression of the user's point of view on the design and performance of domestic electrical equipment.²⁶² However, Symons does not offer any discussion of how, if at all, the user's point of view and consumer experiences were fed back into the electrical industries, despite acknowledging a degree of financial backing from the EDA. Elizabeth Sprenger and Pauline Webb further add to Symons's paper by claiming that the EAW in fact aimed to produce informed consumers who would be able to provide intelligent and technical feedback.²⁶³ The EAW unlike the EDA was an organisation that firmly represented the consumer. Its publications were aimed at promoting the interests of the women who were using domestic technologies and helping such consumers to develop their understanding of the product. It was however predominantly upper and middle class in composition, reaching very few beyond this. Sprenger and Webb claim that the EDA neglected working class women as consumers in their advertisements, whilst the EAW, although also predominantly a middle class organisation, shows a greater degree of sensitivity to 'the varying needs and means of domestic consumers.'²⁶⁴ In contrast Pursell expresses the opinion that the EAW may not have been as unbiased in favour of the consumer as is assumed because many of its members and leaders were associated with the industry, for example as wives of electrical engineers.²⁶⁵

The work of the EAW promoted the installation of electrical wiring to the home and education for the housewife on the most efficient siting of plugs and sockets to aid housework. In the remainder of this section I will contrast the advice of the EAW with the practical problems in individual homes and the variety of experiences of this infrastructure.

Wiring the home

One area which the EAW turned their attention to in terms of both a campaign on behalf of housewives and as part of their electrical educational aims was the wiring of the home. Wiring regulations for the home had been published by the Institute of Electrical Engineers (IEE) at irregular intervals since 1882, but the EAW considered them to be insufficient to meet the needs of the domestic consumer in the 1920s. In her Presidential Address at the fourth annual conference of the EAW in 1929 Mrs Wilfred Ashley stated, 'We felt, as women, that insufficient attention had been given by Electrical Engineers, Architects

²⁶² Symons, L. (1993): p217.

²⁶³ Sprenger, E. & Webb, P. (1993): p58.

²⁶⁴ Sprenger, E. & Webb, P. (1993): p64.

²⁶⁵ Pursell, C. (1999): p52.

and Builders to the way in which our Homes were wired for electrical service.²⁶⁶ Mrs Ashley's statement highlights how the EAW wished to avert later disruption to the home by installing the infrastructure of wiring during building. But in the majority of homes this was not possible. Lily Collier, who grew up in Lyme Regis, describes the wiring of her home in the 1930s:

It was such an upheaval. I can recall when all the floorboards were taken up and how anxious some people were about it all. It was an unknown thing and of course we were not used to it.²⁶⁷

Lily's experience shows the disruption that was caused by installing wiring to existing homes. The process of wiring was not immediately affordable to the majority of the population. To promote the consumption of electricity, assisted wiring schemes were set up by local undertakings. In 1930 the Electricity Commission published a *Report on Assisted Wiring and Hiring and Hire-purchase of Electrical Apparatus*. They recommended that municipal undertakings should make complete wiring installations available using deferred payment systems, and provide electrical appliances through hire and hire-purchase schemes.²⁶⁸ By making electricity available to consumers on a deferred payment system, greater demand for electricity supply was generated and costs were further reduced for future consumers.²⁶⁹ The recommendation specified that a complete installation should be provided on this scheme as opposed to wiring individual areas of the home as it could be afforded, which would lead to a disjointed system of supply in the home. Assisted wiring was offered by power companies in both the towns and the country. For instance the terms of the scheme offered by the Shropshire Electric Power Company required a small deposit and then allowed the balance to be paid through either quarterly instalments or a prepayment meter.²⁷⁰ Assisted wiring bought electricity supply within the reach of a wider proportion of the population and would have helped to even the class distribution in the consumption of electricity supply.

²⁶⁶ IET Archives, NAEST 33/2.11.1, (1929) *What women think about Electrical Development in Great Britain, U.S.A., Holland, and Germany: Being report of proceedings of the fourth annual conference held at the North-East Coast Exhibition, Newcastle-on-Tyne, July 10th-12th*: p3.

²⁶⁷ Quoted in Greene, M.R., (2006): p126.

²⁶⁸ The Electricity Council, (1982): p32.

²⁶⁹ Ballin, H.H., (1946): p231.

²⁷⁰ Anon., (1929) 'Progress in Rural Electrification' in *The Electrical Age* 1(11): p425.

Plugs and sockets

Adequate plug sockets or ‘outlets’ were an important consideration in the wiring of the home. The earliest electrical appliances were plugged into light sockets to make use of existing electrical installation for electric lighting. This was impractical and dado or floor level sockets were introduced in the 1920s. In 1928 the EAW launched their Electrical “Outlet” Campaign which was initiated to ‘...demand that in all new housing estates, provision shall be made for the future labour-saving home by providing an adequate electric service during building.’²⁷¹ This would be cheaper and easier than having to re-wire a house once it had been built. The outcome was to be a National Women’s Specification of the most appropriate number and position of electrical sockets for use in the home.

Image 2.3. is from an article about the minimum requirements for electric sockets for use by the housewife. It shows the benefits of adequate and properly located sockets to the user:

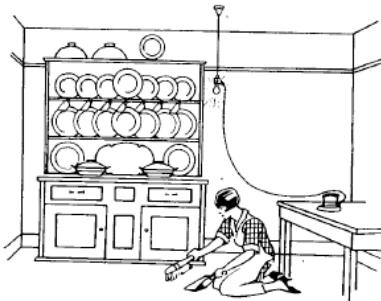


Image 2.3.
‘How Many “Outlets” Have You in Your Home’ 1928²⁷²

²⁷¹ Anon., (1928) ‘How Many “Outlets” Have You in Your Home?’ in *The Electrical Age* 1(8): p290.

²⁷² Anon., (1928) ‘How Many “Outlets” Have You in Your Home?’ in *The Electrical Age* 1(8): p290.

The placing of sockets in the skirting board rather than the use of electric light sockets reduces the dangers posed by having a flex draped across the room. The location and number of sockets in the home would have direct repercussions for the use of electrical appliances in the home, both determining the number of appliances that could be used at one time and the locations in which they could be used.

The National Women's Specification also stated that the outlets should be of the standard design and dimensions as fixed by the British Engineering Standards Association.²⁷³ The importance of British Standard Plugs and Sockets with regards to ensuring safety is highlighted by the EAW and it is recognised that accidents were most commonly related to weakness in the flex at the point where it entered the plug as opposed to the sockets, 'Inefficient gripping, excessive bending and kinking, removing the plug by pulling the flexible instead of the plug top, are a few of the causes which result in the outer covering of the flexible becoming frayed.'²⁷⁴ Electricity was safe as long as the user was educated as to how to use it safely.

The need for power is considered to be an invisible element in advertising in the work of Melanie Unwin on electrical supply and household installations.²⁷⁵ She describes how flexes are often depicted as trailing off or not at all rather than as connected to a power source. This conclusion is however too simplistic as electrical advertising varied greatly across the 20th century and between the institutions responsible for it. For instance the wiring is clearly depicted in early EDA advertisements, sometimes leading directly to the power source at the light socket. The absence of specific detailed depictions of plugs and sockets can be partly explained by the lack of standardisation that continued well into the late 1930s and 1940s and attempts to produce adverts that were applicable across the nation.

Meters and tariffs

In the 1926 Electricity (Supply) Bill, there existed one clause relating to the method of charge to consumers in which it was stated that authorised undertakings might charge, '...a periodical or fixed service charge and in addition a charge for the actual quantity of energy supplied to the consumer or for the electrical quantity contained in the supply.'²⁷⁶ The service

²⁷³ Anon., (1928) 'Electrical "Outlet" Campaign: Women's National Specification' in *The Electrical Age* 1(10): p383.

²⁷⁴ Anon., (1932) 'British Standard Outlets' In *The Electrical Age* 2(9): p352.

²⁷⁵ Unwin, M., (1997).

²⁷⁶ 1926 (167) Electricity (supply). A bill [as amended by Standing Committee C] to amend the law with respect to the supply of electricity. Clause 38: p30.

charge could include rent on electrical lines, fittings, apparatus and appliances where these were provided by the undertaking. The quarterly minimum charge enabled electrical undertakings to recover the costs of supplying to customers who used little.²⁷⁷ There did, however, remain a large variation in the charges and meters used in different localities. A variety of tariffs for electricity had sprung into being in order to encourage the early domestic consumption of electricity. For example, separate tariffs for heating, cooking and power were introduced as well as for peak and off-peak use.²⁷⁸ Prepayment meters were used in a substantial proportion of domestic premises.²⁷⁹ The benefit of a prepayment system was the removal of concerns about the ability to meet quarterly bills, and attractive prices and payment methods were important in encouraging greater consumption. In 1930 it became compulsory to offer a two-part tariff as an alternative to flat rates.²⁸⁰ These multi-part tariffs included a fixed component or service charge with an additional low unit running charge. The most widely used system for determining the fixed component for domestic consumers was based upon either the size of the house, either number of rooms or floor area, or upon the value of the house.²⁸¹

By 1935 however little had been done to standardise tariffs and payment methods. Elsie E. Edwards, a member of the EAW, commented on this in a report for the Association on electricity in working class homes, 'A notable feature in the organisation of the supply of electricity in Great Britain is the large number and diverse character of the tariffs and methods of charge which are present offered in different areas for the various classes of supply.'²⁸² She also comments on the fact that there were different classes of supply, implying that the experience for the working classes were vastly different in terms of cost across the country.

Variations on the standard charge were also exhibited in the 1940s when fuel shortages led to problems with peak time usage. In 1948 the *Report of the Committee to Study the Electricity Peak Load Problem in Relation to Non-Industrial Consumers* recommended that seasonal variations in tariffs to combat problems of consumers using electricity during peak times. Specifically the Committee proposed that during the winter months of 1948-49 there was a surcharge of 0.35d per unit on domestic electricity followed by a rebate of 0.1d over the

²⁷⁷ Goodall, F., (1999): p196.

²⁷⁸ Ballin, H.H., (1946): p243.

²⁷⁹ Ballin, H.H., (1946): p247.

²⁸⁰ The Electricity Council, (1982): p32.

²⁸¹ Ballin, H.H., (1946): pp244-245.

²⁸² IET Archives, NAEST 33/2.11.4, Edwards, E. E., (1935) *Report on Electricity in Working Class Homes* (EAW: London): p45.

following nine months.²⁸³ Yet, when put into practice they found this had little impact upon peak demand and the scheme was dropped.

In addition to a lack of standardisation in the supply of electrical power there was also a lack of standardisation in the costs of electricity for the consumer. Regional variations in cost help to explain social and class variations in the consumer demographic. In regions where electricity was supplied at low cost, a greater number of working class consumers could afford some electricity supply, whilst in some regions the cost would be prohibitive to greater numbers of working class consumers. The variation in the infrastructure of electricity supply in the home like variations in the distribution system of electricity supply was a factor that contributed to the huge variety of social and regional experiences of electricity prior to standardisation in the mid-1940s and beyond.

Fuel shortages and peak loads

Although electricity was marketed as a reliable source of power supply for the home there are some instances when this was not the case. The demands of war on resources in Britain from 1939 led to shortages of coal supplies. In the winter of 1941/2 the use of electricity by domestic consumers was limited in an attempt to conserve resources.²⁸⁴ In 1947 shortages reached a crisis point under Emanuel Shinwell (1884-1986), the Minister of Fuel and Power. Measures to limit the impact of the fuel crisis included the restriction of the use of electricity between the hours of 9am to 12am and 2pm to 4pm. It was near impossible to enforce these restrictions as supplies could not be selectively cut off but public co-operation meant power could still be supplied to essential users, such as hospitals.²⁸⁵ Advice was confusing for housewives, as Caroline Haslett noted in 1954, ‘Housewives having heard repeatedly that their use of electricity stopped the industrial machines have now to learn that the increased use of electrical equipment in the home not only cheapens electricity for industry, but also aids the production of domestic electrical goods for export.’²⁸⁶ Conflicting advice about avoiding use during peak hours and later the benefits of high demand for electrical production can be traced in the journals of the EAW and in popular magazines such as *Good Housekeeping*. As well as problems of fuel shortages there were also instances when power cuts occurred due to faulty generating stations or transmission lines. Maggie Joy Blunt

²⁸³ The Electricity Council, (1982): p42.

²⁸⁴ Hannah, L., (1979): p303.

²⁸⁵ Hannah, L., (1979): p316.

²⁸⁶ IET Archives, NAEST 33/2.17, Haslett, C., (1954) *The British Electrical Power Convention: Electricity in the Modern Home*: p14.

records one such instance in a diary entry on Thursday 6 February 1947: 'Electricity out for three-quarters of an hour from 5pm. I surrounded myself with four candles. Medieval Gloom.'²⁸⁷ In this instance the power cut does not appear to have been too inconvenient but the lack of supply during a power cut would prevent the use of any electrical appliances in the home, and could potentially prove very disruptive to housework. Power cuts contradict the notion constructed by the supply industry and advertisers that electricity was an efficient source of power in the modern home.

The Diffusion and Distribution of Electrical Appliances

In each of the following chapters I will introduce the diffusion and distribution of each case study more fully, but I feel it is worth providing a brief overview here at the outset. Many electrical appliances came into existence in some form during the end of the nineteenth century but were not mass produced and consumed until after the turn of the century. The first decade saw the introduction and widespread use of electric irons, electric vacuum cleaners, electric toasters and the radio. After the initiation of the national grid in 1927, electric washing machines, refrigerators, electric cookers, and electric dishwashers were also becoming commercially available throughout the 1930s. It is difficult to pinpoint the exact date at which these technologies became available as historical accounts disagree significantly and there are national, local and regional variations. In addition imports from America and the continent made appliances available on the consumer market in small numbers before their British counterparts and confuse the chronology of the introduction of the first electrical appliances. In 1966, T.A.B. Corley compiled some statistics from HMSO Reports on the distribution of electrical appliances in Britain across different social groups. His findings demonstrated that electric irons, fires and vacuum cleaners were the earliest and most widespread electrical appliances across all classes of society.²⁸⁸ In contrast larger consumer items such as refrigerators, electric cookers and washing machines showed a much slower diffusion and there remained large class differences in their consumption across the period 1927-1960. Their consumption was determined by cost, availability, the social significance of each technology and its ease of accommodation in the home. I will consider the diffusion of each electrical case study more fully throughout the thesis.

²⁸⁷ Garfield, S., (2004): p345.

²⁸⁸ Corley, T.A.B., (1966): p16.

2.5. Conclusion

The electricity supply industry was a dynamic system that expanded and both influenced and was influenced by new technological developments, changes in different domestic contexts, and the changing needs of suppliers and consumers. Problems that were met in the construction of a national grid were the consequence of its historical development and early origins in disconnected privately owned undertakings. The development of the national grid offers an example of how technology and technological systems are not deterministic but a consequence of unforeseen uses and consequences in a specific context. The use of electricity as a source of power as opposed to gas in new housing was partly the consequence of its selection by the government as more economical, but as we shall see through the case study of cookers in chapter 4 electricity did not replace gas entirely. There was a huge variety in the form and structure of British homes into which the infrastructure of electricity supply was built and installed and within which the consumption of electrical appliances occurred. The way in which they could be used was determined not only by the available spaces of the home but the availability of a convenient and reliable electricity supply.

The electricity industry worked hard through trade organisations to advocate the benefits of electricity to housewives. The infrastructure of electricity supply in the home was not, however, always installed with the user in mind. The EAW fought to promote the point of view of its upper and middle class members on adequate and appropriate wiring of the home for the domestic use of electricity. The number and location of sockets was important in determining where appliances could be used in the home. In addition the costs of electricity had repercussions for the affordability of consuming electrical appliances. Understanding this infrastructure of wiring, electric outlets and tariffs provides information about the electrical nature of domestic contexts within which electrical appliances were used and the variations and limitations experienced by different consumers.

Bill Luckin describes the efforts of the industry to promote domestic electricity to women as, ‘Electricity, in a social environment such as this, became a quasi-magical elixir which would abolish not only housework but every discomfort and inconvenience which detracted from leisure and narcissism.’²⁸⁹ The remainder of my thesis will focus on case studies of the use of individual appliances within the home and how they altered the work processes, and use and understanding of space, with which they were linked. The reality was not quite the magical solution electricity promised but rather a much more disparate and transitional

²⁸⁹ Luckin, B., (1990): p44.

process of consumption that was determined by the needs and means of the individual consumer.

Chapter 3

Cleanliness

'Cleanliness is next to Godliness'

The proverb that 'Cleanliness is next to Godliness' originates from Bacon's work, *Advancement of Learning*, 1605, in which he writes that 'Cleanliness of bodie was euer esteemed to proceed from a due reuerence to God'.²⁹⁰ The proverb became pervasive within society on both sides of the Atlantic, often finding its way into popular literature. For instance, in J.T. Farrell's anti-capitalist 1935 novel *Judgement Day*, Sister Bertha calls out 'Cleanliness is next to Godliness'.²⁹¹ The proverb remained significant in popular culture throughout the twentieth century. By linking the notion of cleanliness and Godliness it makes a direct link between cleanliness and morality. In the twentieth century home cleanliness has often been seen as an outward presentation of the moral nature of the individual and the family.²⁹² Dirtiness, along with drinking, stealing, fighting and uncontrolled sexual behaviour, was a sign of moral failure. Alongside respectability, the appearance of cleanliness was an important marker of social class. The preoccupation with an outward show of cleanliness was evidenced in whitened doorsteps and starched white curtains, as well as in spotless white pinafores and shiny shoes.

The introduction of electricity was linked to the idea of a clean and healthy modern home in advertising. Not only did electric light illuminate and draw attention to the dirt associated with gas, paraffin and solid fuels, but the development of new electrically powered technologies such as vacuum cleaners, washing machines, dryers, irons and dishwashers eased the labour intensive nature of the cleaning process of both the home and the artefacts within it. The first widely used electrical appliances on the British domestic market from the 1920s and 1930s were those that helped in the processes of cleaning and laundering – irons and vacuum cleaners. Both of these technologies were also mass consumed across all classes in the

²⁹⁰ Simpson, J., (1990): p38; 'cleanliness, n.', (1989), *Oxford English Dictionary Online*. [<http://www.oed.com/view/Entry/34065>, accessed December 2011].

²⁹¹ Farrell, J. T., (1935): p322.

²⁹² See the work of Kelley, V., (2009): pp719-735.

1920s and early 1930s and can offer insights into the presentation of electricity as clean in constructions of domestic modernity and similarities and differences in their use by different classes. Electric irons and vacuum cleaners are technologies that would have been used privately within the home for the purpose of facilitating a public appearance of cleanliness and as a visible sign of the moral and social status of the household.

In her work on the home and gender identities, Mona Domosh has highlighted how, '...when we move out of the house and on to the streets, our identities are constantly being monitored, judged, constituted, negotiated and represented.'²⁹³ Whilst I agree with this assessment of public identities outside of the home it is also the case that visitors within the home make similar observations and judgements about the characters and identities of the inhabitants. Cleanliness in the home becomes just as important as personal cleanliness in the outward moral presentations that social standards demanded. The boundaries between public and private in relation to domestic space are thus more fluid than one might first assume and it is the activity and use of the space that determine the public or private nature of it. In this chapter I want to develop a notion of the fluid nature of space, and the way it is used and the meanings with which it was invested, by considering how it is transformed by the presence and use of electric irons and vacuum cleaners in the 1920s and early 1930s. Unlike the following chapter in which the activities and appliances addressed are mostly confined to a specific space within the home, kitchens, this chapter considers appliances that are portable throughout the whole house. Thus throughout the chapter I will demonstrate how these two electrical appliances are linked by changing ideologies of cleanliness and changing understandings of domestic space.

First, I will consider the consumption and use of electric irons in the modern home to maintain a neat and clean outward moral presentation of the individual and the family. Statistics indicate that electric irons were rapidly adopted by consumers, such that by 1939, they were found in over 50% of total households and 80% of homes that had been wired for electricity.²⁹⁴ In 1948, 96% of upper and middle-class wired homes owned an iron, in comparison to 83% of working class. It was the most widely used electrical appliance in Britain at this time and remained so into the 1960s.²⁹⁵ By 1963, 75% of all British households in Britain owned an electric iron.²⁹⁶ There was little variation between the different social classes. These statistics indicate the proportions of the population using electric irons during the 1930s to

²⁹³ Domosh, M., (1998): p280.

²⁹⁴ Forty, A., (2000): p59; Bowden, S & Offer, A., (1994): p729; Corley, T.A.B., (1966): p16.

²⁹⁵ Banham, R., (1975): p14.

²⁹⁶ Bowden, S & Offer, A., (1994) ': p729.

1960s but are not an entirely accurate picture for several reasons. Complications arise from the circulation of second hand appliances of which there is no record. There is also no distinction between households with just one electric iron or households that owned more than one. It is thus possible that consumption levels were even higher than one might assume based upon these statistics alone. As well as considering in more detail who the users of electric irons were, I will focus on how electric irons were easier and more pleasant for the user than the flat irons that preceded them, and whether the flexibility in the location of ironing that they enabled altered the use and experience of space within the home.

Second, in order to understand the domestic space in which electricity was consumed I will consider the relationship between cleanliness and the construction of the ideal modern home in advertising and displays for electric vacuum cleaners. I also wish to investigate the ideal that a clean home is a modern home. The ideal modern home was one that in its design and function drew upon contemporary ideas of scientific rationalism and technocracy. This included not only the application of notions of scientific management and efficiency to the kitchen, as discussed in the next chapter, but encompassed rising standards of hygiene and cleanliness. Electricity was often directly linked with cleanliness and hygiene in industry advertising.

Third, after electric irons, vacuum cleaners were one of the earliest forms of electrical appliance to appear on the domestic market and the second most commonly found within homes across Britain during the late 1920s and 1930s. I will consider the relationship between vacuum cleaners and the notion of the ideal clean modern home, social class and modern home design. In 1938, 27% of British households owned an electric vacuum cleaner, rising to 40% in 1948, and as high as 77% in the early 1960s. These statistics alone mask social differences in the adoption of electric vacuum cleaners, as they do not give a picture of the distribution of consumption across different classes. However, the available statistics also indicate that in 1948, 83% of upper and upper middle class households owned a vacuum cleaner in comparison to 61% of lower middle class and just 26% of working class homes.²⁹⁷ In contrast to electric irons, evidence can be found to indicate the percentage of second hand vacuum cleaners in use during the 1940s. Statistics from a Mass Observation Survey Report in June 1949 on Paint, Colour and the Housewife, that included domestic fittings and appliances, showed that 12% of their sample had a second hand vacuum cleaner.²⁹⁸ This sample was taken from a predominantly middle class sample and as a result this percentage would in all likelihood be different in a working class sample. Similarly to electric irons, vacuum cleaners

²⁹⁷ Corley, T.A.B., (1966): p16.

²⁹⁸ Mass Observation Archive, File Report 3131, (1949) *Paint, Colour and the Housewife*: p37.

were an electrical appliance that could be used throughout the home and had an impact on the space in which it was used and stored.

Fourth, I will consider alternative individuals to the ‘housewife consumer’, introduced in Chapter 1, who were using vacuum cleaners within the home. This will include a consideration of how vacuum cleaners were presented as a solution to the ‘servant problem’. This chapter will show how by consuming electrical appliances such as electric irons and vacuum cleaners individuals were buying into the specific ideal notion of a hygienic and clean modernity that advertisers presented in marketing to varying degrees. It will also demonstrate the limitations of portability in the use of electric irons and vacuum cleaners in the home, and provide examples of alternative consumers to the housewife in the home.

3.1. Electric Ironing

The social significance of being cleanly and neatly dressed has been well established in the introduction. Well laundered clothes were an important means of maintaining the moral appearance of the household. Ironing provided a final touch, and electric irons were presented to consumers as a means of reducing the time and labour intensive nature of this household task. I will begin this section by describing how the experience and location of ironing was contingent upon the technologies that were being used to facilitate it. Then I will explore in more detail who was using electric irons, and how the nature of the domestic space in which they were used was transformed during the process of ironing. Finally I will consider storage spaces for ironing technologies. My aim is to highlight the portability of electric irons, and to provide an example of the fluid nature of different domestic spaces through an examination of their use.

‘Take the “fag” out of Tuesdays’²⁹⁹: Advertising electric irons

In the nineteenth century and into the early twentieth century the process of ironing was a hot, time consuming and labour intensive process. The most commonly used form of iron was the flat iron or ‘sad iron’, as it was often known.³⁰⁰ This was a solid piece of iron weighing between five and eight pounds, which was heated on the stove. It was therefore an

²⁹⁹ MOSI Archives, 1989.339/486/83, (n.d.), EDA 150.

³⁰⁰ The name ‘Sad’ derived from *Saed* meaning Solid.

activity that, if done at home, took place invariably within the kitchen.³⁰¹ In middle and upper class homes that were designed to provide an aesthetically pleasing environment for their occupants, ironing was thus relegated to the back of the house or the basement. By 1930, comfort and relaxation were deemed essential in the home, and with the often more central location of the kitchen, particularly in middle class homes, it was no longer acceptable, to those performing the task, for ironing to remain a hot and tedious process.³⁰² Electric irons were marketed and consumed as a solution.

Advertising in newspapers and magazines in the 1920s and 1930s represented electric irons as devices that would relieve the drudgery of ironing. The Electrical Development Association (EDA), created an ideal in which the housewife could complete her ironing in a less time and labour intensive fashion. One advert claimed:

Take the “fag” out of Tuesdays. Don’t bend over an ironing table or carry irons to and from the kitchen range. Keep fresh instead of getting tired – iron the electric way.³⁰³

The claim that electric irons would remove a need to carry heavy irons to and from the kitchen range, hints at the fact that non-electrical ironing can only be done in the vicinity of the stove. It also hints that ironing need not necessarily be done in the vicinity of the hot range provided that there was access to a power socket, a limitation that I will return to in more depth later in this section. In addition in the above statement the EDA both viewed and constructed the consumer of electric irons as a generic tired and overworked housewife in need of simple time and labour saving devices. Electric irons would provide this making the housewife happy and content as shown in the EDA advertisement in Image 3.1. Again the assertion that the housewife will benefit from the time saving nature of ironing with electricity is the principal focus of the advertisement. This links with Ruth Schwartz Cowan’s thesis outlined in my Introduction, that many household technologies were not in fact time saving since they were linked to changing patterns of housework. For instance ironing might be done more frequently as a consequence of being less labour intensive. Both of the above advertisements are both from the EDA and aimed at promoting electricity and its associated appliances more generally. In consequence, more emphasis is being placed on the universal characteristic of time saving as opposed to features such as temperature control that differed between models.

³⁰¹ In working class houses the kitchen and activities within it formed the centre of the domestic space rather than a dedicated space aside from the primary living space.

³⁰² Forty, A., (2000): p114; Langhamer, C., (2005): pp341-362.

³⁰³ MOSI Archives, 1989.339/486/83, (n.d.) EDA 150.



Image 3.1. EDA Advert 'The Reflection of a Housewife'³⁰⁴

Consumers of electric irons

In image 3.1., the woman depicted could belong to any social class or group. I want to now explore further who the consumers actually were. We have already seen that electric irons were present in the majority of homes across all classes in society, with very small margins of difference between the upper and working classes. In upper and upper middle class households the majority of the ironing would have been done by servants in the 1920s and 1930s. Dolly Davey, a domestic servant in the household of Lady Beauchamp during the 1930s, provides an example of how modern appliances were not always deemed necessary for the servants to use, in her description of using an old flat iron:

I once scorched a very, very lovely pair of creped chine French knickers belonging to her [Lady Beauchamp]. I was ironing them, and instead of trying the iron out on something else first, which I usually did, I grabbed at these pants, put them on the table (we didn't have even an ironing board) and whizz! Right through!³⁰⁵

³⁰⁴ MOSI Archives, 1989.339/486/63, (n.d.), EDA 112.

³⁰⁵ Davey, D., (1980): p17.

In Daphne Du Maurier's novel *Rebecca*, first published in 1938, the unnamed heroine makes use of a travel iron in preparation for a fancy dress ball at her country home, as described in the following extract:

I picked up the white dress I had left on the floor and put it back in the box with the tissue paper. I put the wig back in its box too. Then I looked in one of my cupboards for the little portable iron I used to have in Monte Carlo for Mrs Van Hopper's dresses. It was lying at the back of a shelf with some woollen jumpers I had not worn for a long time. The iron was one of those universal kinds that go on any voltage and I fitted it to the plug in the wall. I began to iron the blue dress that Beatrice had taken from the wardrobe, slowly, methodically, as I used to iron Mrs Van Hopper's dresses in Monte Carlo.³⁰⁶

This is a work of fiction but it can still give us an indication of the prevailing social attitudes towards the practice of ironing. As mistress of the house it was imperative that our heroine was neatly and well presented to receive her guests and therefore that her dress had been ironed well. The inclusion of this description of such a mundane household task is testament to the social importance of ironed clothes as an outward presentation of the morality and status of the individual. It is unlikely that women of an equal social standing to our heroine would have done their own ironing at this time as they would have had servants to do it for them. In fact the lady's maid, Clarice, had in this instance been dismissed by her mistress for the evening, since the heroine having begun her adult life as a lady's companion, was familiar with the process of ironing evening dresses. The use of the iron in the space of the bedroom highlights that electric irons could be used in any space within the home, assuming that there was an accessible power supply.

Fictional accounts such as this one from *Rebecca* are targeted at and depict the educated wealthier classes of society and thus can only tell us so much about who was using electric irons and in what way. In order to access the experiences of the lower middle and working classes, oral history interviews can be of more use. One interviewee's mother, who had been fortunate to have a housemaid to help with the washing prior to the family's move to Manchester in 1947 used an electric iron in preference to the flat iron 'My mother used an electric iron in Aberdeen, though she did have on occasion, possibly in case there was a power cut, always could have been, she had a flat iron which she would heat on the open fire, she

³⁰⁶ Du Maurier, D., (1938): p248.

hated it, she much preferred the electric iron, I remember that.³⁰⁷ Despite having domestic help, she still did the ironing. The retention of a flat iron alongside the new electric iron supports the argument that the transition to electric ironing was more incremental than can be seen in consumption statistics alone, as people were using it alongside the existing ironing technologies in their home. The use of electric irons in preference to flat irons is also expressed from a working class perspective by electrical engineer Norman Townson, who grew up in a terraced house in a working class area just north of Lancaster. He described his mother's experience of ironing and how it changed with the acquisition of an electric iron:

... she used to heat up the flat iron in the oven and then use that to do some ironing, and it used to cool off pretty rapidly, then it used to have to go in again. So it used to take her quite a long time to do the ironing. And the first appliance I can remember being bought was an electric iron, which my mum was really chuffed with, because for the first time she didn't have to keep breaking off the ironing to let the flat iron heat up. It worked all the time and it had some kind of crude thermostat on it as well, so as long as you were careful, and you were quick, you didn't burn your clothes. But again that was a problem because where she wanted to use it there wasn't a socket, so all my Dad did was put a bayonet plug on it and it used to go into the light socket.³⁰⁸

The quotes highlight some differences between working class experiences and those of the upper classes as depicted by Du Maurier above. Norman Townson highlights how the lack of available sockets in working class homes often limited where the ironing could be done. For example, in *Rebecca* the ironing is being done in one of the bedrooms. The presence of a power socket in the bedroom would be uncommon within the houses of the lower classes at this time, where wiring was often limited to downstairs. It thus draws attention to another social difference in the use of electric irons in relation to the possible domestic spaces in which they could be used.

Flexibility of use was much greater in the homes of the upper and upper middle classes. However, early electrical irons such as that used by Norman Townson's mother could be plugged into the light socket. This is one explanation for the rapid and early spread of electrical irons. They were not reliant on the installation of plug sockets but could be used anywhere where electric lighting was installed. Yet, in the absence of special adapters to allow lighting to be used concurrently this was another limitation on the flexibility of electrical

³⁰⁷ Balmer, P., Oral History Interview, September 2010.

³⁰⁸ Townson, N., Oral History Interview, August 2010.

ironing, since it could not be used at the same time as electric lighting. One final limitation was the length of the flex in determining the proximity to the power supply that was required and thus location of ironing. Having introduced the issues surrounding flexibility of use and its limitations here I will examine them in greater detail in relation to vacuum cleaners in the third section below.

Spaces of use and storage

In this section I will consider how domestic space was altered by the use of electric irons. In order to undertake the process of ironing a flat surface was required, and the ironing board provided a ‘technological platform’ for the use of electric irons. I also want to explore whether the storage of these technologies, electric irons and ironing boards, had an influence on domestic space and if so, in what ways? Returning to Dolly Davey’s use of the iron, reference is made to the use of the table for ironing in the absence of an ironing board. When boards were introduced they were often placed across a flat topped chair and a table, a method that was still used in many homes in 1949. Folding boards were a late development. They were often adjustable to the height of the user, averaging approximately 34 inches.³⁰⁹ Caroline Haslett observed in 1953 that ‘demand must create the supply’ of suitable ironing boards that would allow the housewife to sit during ironing and thereby increase the comfort of the housewife.³¹⁰ The EDA, with which Caroline Haslett was associated in her role as President for the Electrical Association for Women (EAW), had also promoted the idea of sitting down to iron as a benefit of electric irons:

Do you realise, Mrs. Housewife, how much time you waste bending over the hot stove changing irons and walking to and fro? Why not sit down to iron? Make work a real pleasure...³¹¹

It is, however, impossible to assess how many housewives chose to sit to iron.

Since the housewife no longer needed to situate her ironing in front of the stove she could do it anywhere within reach of a socket and could be standing or sitting depending on personal preference. There were a number of other forms of ironing board that became available. These included sleeve boards and skirt boards. The ironing surface was required to

³⁰⁹ Peet, L. J. & Thye, L. S., (1949): p265.

³¹⁰ Haslett, C. In Allen, E., (1953): p1.

³¹¹ MOSI Archives, 1989.339/486/19, (n.d.), EDA 30.

be '...very firm and large enough to allow a large space to be ironed at any one time, and also to support the garment while it is being ironed'.³¹² The boards were often covered with heavy and unbleached muslin that would resist wear and help to preserve the equipment.³¹³ Padding also provided a certain amount of give that would ease the ironing process. By 1949 asbestos and Fiberglass covered boards were also available that would not burn and needed only an occasional clean such that they were much easier to maintain.³¹⁴ The use of the ironing board not only required access to power but a clear space in which it could be temporarily erected and used, the availability and location of which would have varied in existing homes.

The temporary nature of the use of electric irons and ironing boards posed the additional space requirement of storage. Flat irons were permanently stored on the stove or range to keep them hot and ready to use, even when not needed. In contrast in *Rebecca* the travel iron was stored in the bedroom cupboard. It is but one example of how electrical irons could be stored on a shelf or in a cupboard anywhere in the house. In contrast its larger and often awkwardly shaped partner, the ironing board, posed a greater problem for the housewife in terms of storage.

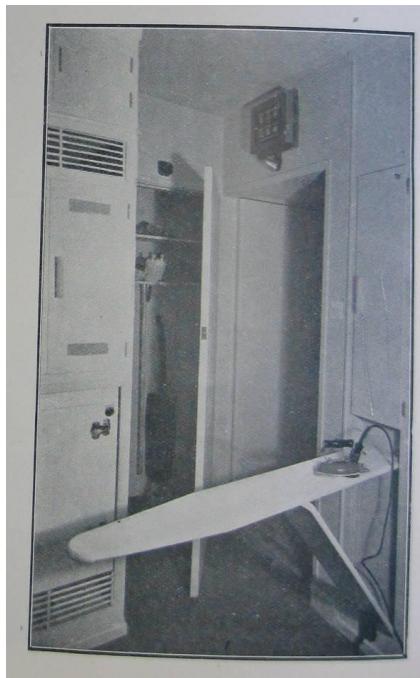


Image 3.2. Hinged Ironing Board in the EAW House at Bristol, 1936.³¹⁵

³¹² Balderston, L., (1923): p242.

³¹³ Balderston, L., (1923): p243.

³¹⁴ Peet, L. J. & Thye, L. S., (1949): p265.

³¹⁵ EAW, (1936) 'The EAW House at Bristol' In *The Electrical Age* 3(1): p24.

One solution as presented by the EAW in their 1936 design for an all-electric house that was built in Bristol was to have an ironing board that was hinged to the wall, as depicted in the photograph in Image 3.2. In this example the folding board was located in the kitchen and designed as a space saving feature. Its location in the kitchen might indicate a continuing association between the activity of ironing and the kitchen space. It might equally be a consequence of limited space elsewhere in the house reinforcing the argument that use of space in the home was predetermined by the availability and form of existing spaces, as well as the choice of the individuals using these technologies. Furthermore it is clear in this photograph that whilst the system of storing the ironing board saves space, the board prohibits access to the refrigerator whilst in use, impeding the multi-functional nature of the kitchen space. It is a clear example of the fluidity of space as the same space is used for very different purposes at different times depending on which technology is primarily being used.

Electric irons reduced the hot and labour intensive process of ironing. They could be used in a variety of alternative spaces to the kitchen within the limitations of available power supply and access to a table or board for ironing on, altering the nature of the space whilst in use. The portability of electric irons and the limitations of using them, such as length of flex and availability of power supply, are also applicable to varying degrees in relation to the domestic use of vacuum cleaners. Next to electric irons, vacuum cleaners were the next most prolific electrical appliance found in British homes between 1927 and 1960, and it is these that I will be focusing on in the remainder of this chapter. First I will consider the relationship between cleanliness, electricity and modernity in constructions of domestic space by the electrical industry to understand the representational spaces in which vacuum cleaners were consumed.

3.2. The Constructed Ideal of Domestic Cleanliness as Modernity

Electric irons and vacuum cleaners are two very different appliances linked by their portability, affordability and their use in the maintenance of a clean and moral presentation of the household and home. Electric irons were used in the home to aid the laundering process and the moral presentation of the household, whilst vacuum cleaners were used to maintain socially expected levels of cleanliness in the home. Vacuum cleaners interacted with the space by both their presence and use but also by changing the physical properties of the space as a consequence of their use, i.e. they left the space cleaner than it was before they were used. Before exploring how vacuum cleaners were marketed as an economical and efficient means

of preserving cleanliness, I want to look at the relationships between cleanliness, modernity and electricity in constructions of the ideal domestic space in which they were situated.

In the same way that the hygienic home was presented by public health practitioners and advertisers of electricity as a modern home (see Chapter 4), so a clean home was a modern home also.³¹⁶ Maintaining a clean home environment was one way to prevent the spread of disease causing bacteria. In her work on dirt, Rosie Cox emphasises that the definitions of what constitutes dirt and cleanliness are historically and socially constructed in a specific context.³¹⁷ In this sense, individual cleaning habits are a response to social expectation at a specific time. Victorian understandings of dirt were determined by its location. Dirt was a relative substance viewed as ‘matter out of place’, and could be harmless or even useful in certain states and places.³¹⁸ Perceptions of it as harmful were thus linked to its context, and in the home it became connected with the senses of sight and smell. In the early to mid-twentieth century the historical context was such that social expectations were indirectly influenced by changing scientific understandings of disease and its relationship to dirt. The rise of bacteriology promoted an increasing awareness of invisible bacteria, and of health concerns associated with dust and dirt. According to Ruth Schwartz Cowan in her work on American homes, ‘The discovery of the ‘household germ’ led to an almost fetishistic concern about the cleanliness of the home.’³¹⁹ By 1930 the meanings attached to the domestic environment had changed. It became a space that was ‘...the source of physical welfare and health’,³²⁰ and had to be clean and hygienic in order to fulfil this role.

Although levels of cleanliness could no longer be wholly determined visually, the appearance of cleanliness within the home denoted the housewife’s moral condition.³²¹ Nancy Tomes has contributed to this discussion with the idea that the ability of housewives to achieve expected standards of cleanliness reinforced social differences, such as rich and poor, educated and uneducated, moral and immoral.³²² Dirt was thus a threat to both the physical and moral health of an individual. In the home it became no longer acceptable for dust and dirt to collect, as levels of cleanliness rose to meet modern moral and aesthetic

³¹⁶ Tomes, N., (1998); Cox, R., et al. (2011).

³¹⁷ Cox, R., ‘Dishing the Dirt: Dirt in the Home’ in Cox, R., et al. (2011): p38.

³¹⁸ Douglas, M., (1966); Crook., (2004):p158.

³¹⁹ Schwartz Cowan, R., In Mackenzie, D. & Wajcman, J., eds. (1999): p191.

³²⁰ Forty, A., (2000): p114.

³²¹ te Hennepe, M., (2007): p123; Crook, (2004):p158. The importance of cleanliness was not exclusive to inside the home as the scrubbing and whitening of stone doorsteps each day was an important signifier of the hard-working and moral nature of the housewife. See also Seymour, J., (1987): p4.

³²² Tomes, N., (1998): p11.

standards. Housewives were expected by their peers to achieve and maintain rising standards of cleanliness across all classes of society.³²³

Public exposure to the scientific foundation for the importance of cleanliness was arbitrated, among other media, by medical practitioners, home economists, and commercial advertising. I have discussed in the previous chapter the role of medical and public health practitioners in promoting ideas of hygiene in the twentieth century. By extension they encouraged increasing levels of cleanliness in the home. Similarly, home economists in both America and Britain were early promoters of cleanliness in the home and of educating women to achieve appropriate standards. For instance, Catherine Beecher in America was one of the earliest proponents of not only efficiency in the home, but also cleanliness and comfort.³²⁴ Christine Fredrick, similarly an early advocate of scientific efficiency in the home, emphasised cleanliness, and in fact worked as a mediator between manufacturers of electrical appliances and their consumers, to promote electric aids to housework.³²⁵ Home economics in Britain employed these same principles of efficiency and cleanliness. An example of a home economist working in Britain was Marguerite Patten whose first job was working for the Eastern Electricity Board. Across Britain, improved supplies of domestic clean water, electricity, and commercial cleaning products facilitated improved cleanliness among all classes of society.

The rising social standards of cleanliness during the first half of the twentieth century were reflected in the modern aesthetics of elite architecture, which called for clean lines and open spaces. The ideal home and its furnishings were designed to facilitate the appearance and maintenance of cleanliness. One example of modern architecture in Britain in the 1930s was the EAW's house at Bristol completed in 1936. This house was designed and built with the express purpose of promoting the benefits of having an all-electric house and uniting the concepts of electric and modern. It was the ideal modern electric home but represents only the aspirations of modern design not the actual homes in which the vast majority of the population would have lived. It was designed to be very square in shape with clean lines as can be seen in Image 3.3. and the overall result pictured in Image 3.4. was a clean white and minimalist appearance.

³²³ Giles, J., 1993.

³²⁴ Hoy, S., (1995): p19.

³²⁵ Hoy, S., (1995): p153.



Image 3.3. Sketch of the All-electric House at Bristol³²⁶

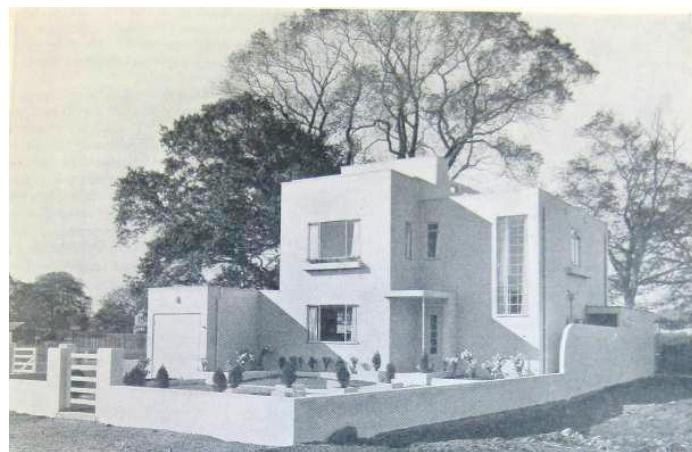


Image 3.4. The Completed All-electric House at Bristol³²⁷

Among the features of the inside of the all-electric house, was a staircase balustrade that was ‘solidly constructed to avoid the accumulation of dust.’³²⁸ In this instance the design of the house itself, in addition to the appliances it contained, was targeted at achieving a greater degree of cleanliness whilst saving labour. Examples of other changes in interior design linked to the idea of the home as a clean and healthy space include the removal of mantelpieces and other dust catching surfaces. The increasingly sparing use of decorative items around the home was driven by a desire to reduce the difficulty of removing dust. The modern electrical home promoted by the EAW linked electricity to cleanliness and hygiene in its very design as well as in the way that it was used.

³²⁶ Newman, D., (1935) ‘The E.A.W. All-Electric House Building at Bristol’ In *The Electrical Age* 2(21): p888.

³²⁷ Anon., (1936) ‘The E.A.W. House at Bristol’ In *The Electrical Age* 3(1): p25.

³²⁸ Anon., (1936) ‘The E.A.W. House at Bristol’ In *The Electrical Age* 3(1): p25.

Following the Second World War, new homes for the working classes often included built-in glass cabinets for the display of non-functional possessions. These modern houses were ‘...devoid of dust catching ledges and old-fashioned mantelpieces.’³²⁹ In her study of open plan homes built during the post-war reconstruction of Britain, Judy Attfield uses oral histories to demonstrate the significance of changes in modern interior design for the occupants:

One interviewee recalled her pleasure on moving into a modern council house to find that there was no mantelpiece. After having had to clean the parlour every week as a girl in her family home, the fireplace mantel signified interminable hours of boring work dusting the old-fashioned fussy Victorian bric-a-brac.³³⁰

In this reminiscent account the lack of dust catching surfaces was a time saving attribute of council homes.

It was within the context of the ideal, clean modern home that the use of vacuum cleaners was represented in advertising and displays to the consumer. Advertising thus recognised, constructed and perpetuated the importance of social standards of cleanliness in the home. This helped to convey the message that by using electric vacuum cleaners to improve cleanliness, consumers were also buying into the aspirational ideal of the modern home.

3.3. Vacuum Cleaners

Cleaning the house involved dusting, sweeping, scrubbing and polishing surfaces and furnishings. The development of electrically powered vacuum cleaners, alongside the proliferation of cleaning products on the domestic consumer market, contributed to rising standards of cleanliness and facilitated the ability of housewives to meet these throughout the period from 1927 to 1960. Vacuum cleaners were invented and patented independently in both America and Britain. In Britain the first vacuum cleaner was invented by Herbert Cecil Booth in 1901. He came up with the idea when he placed a damp cloth on the arm of a chair and found on applying suction that it effectively removed a large amount of dust. In 1902 he formed the British Vacuum Cleaner company (BVC) to manufacture and sell his invention.³³¹ Initially they developed and produced a number of hand operated models for the domestic

³²⁹ Attfield in Cieraad, I., ed. (1999): p79.

³³⁰ Attfield in Cieraad, I., ed. (1999): p79.

³³¹ BVC, (1969): pp2-3.

market. The company expanded rapidly with the introduction of electricity, producing their first upright model with an outside bag in 1921. In a retrospective history of the company produced during the 1950's, BVC made significant claims for this model:

[It] ...symbolised a new generation of vacuum cleaners that took the last ounce of drudgery out of keeping a house clean and turned it into a rather enjoyable task. More and more housewives were now discovering there was something very satisfying about using a machine that would clean so easily and thoroughly.³³²

Only a very small minority of homes would have owned a vacuum cleaner in 1921, but they were rapidly adopted by housewives, a trend that is also visible in the statistics about consumption presented in the introduction to this chapter. The notion that vacuum cleaners enhanced the process of cleaning in those homes in which it was used, and that were themselves inherently clean because the dust and dirt was contained, was a common feature in advertising. In this section I will explore the messages contained in advertising for vacuum cleaners, focusing on three ways in which the vacuum cleaners was linked to the ideal clean modern home. First, I will explore how cleanliness, hygiene and modernity were adopted and promoted by the electrical industry in the marketing of vacuum cleaners. Second, I will discuss the furnishings of the ideal and clean modern home and their relationship with vacuum cleaners and cleanliness. Third, I will discuss the portability of vacuum cleaners, their flexibility of use and its limitations.

'No more dust, No more dirt'³³³: Advertising vacuum cleaners.

The electrical industry adopted the notion that a clean home was a modern home in order to promote vacuum cleaners. Notions of vacuum cleaners as time and labour saving, a common theme in advertising for all electrical appliances, were intertwined with the more specific impact of vacuum cleaners upon the cleanliness of the home. An advertisement by BVC for The Goblin DeLuxe Model, for instance, described this model as having '...a powerful motor that sucks up every grain of dirt, every speck of dust, in a single effortless sweep.'³³⁴ The unison of the concepts of electricity and cleanliness in adverts for vacuum cleaners indicates that the industry viewed cleanliness and the maintenance of a healthy environment as a major

³³² IET Archives, NAEST 045/255, *The story of the World's first vacuum cleaner*: p9.

³³³ Science Museum Archives, Trade Literature, (n.d.) Goblin Leaflet. This slogan was used by the British Vacuum Cleaner Company in the 1930s.

³³⁴ Science Museum Archives, Trade Literature, (n.d.) Goblin Leaflet.

concern for consumers, and recognised changes in connotations of the home linked to rising standards of cleanliness. Conversely by drawing upon the supposed importance of cleanliness the electrical industry also promoted its perceived importance and contributed to the rise of socially acceptable standards.

The description of the Goblin DeLuxe Model also highlights how vacuum cleaners were unique. The application of suction meant they collected dust and dirt on the spot without simply redistributing it around the house as a brush might. This was a feature that was emphasised by the electrical industry as evidenced in the slogan from an Electrical Development Advertisement, 'The Modern way is to COLLECT IT ON THE SPOT with the ELECTRIC SUCTION CLEANER.'³³⁵ This was an industry wide advertisement promoting electricity in general as opposed to promoting specific brands of appliance and makes a clear link between electric vacuum cleaners, the effective removal of dirt and modernity. Furthermore, in the fight against dust, dirt and even perhaps more importantly germs, vacuum cleaners were an indispensable weapon.



Image 3.5. Goblin advert.³³⁶

In Image 3.5. this is clearly depicted as an army of British vacuum cleaners in pursuit of dust and germs. Nancy Tomes has suggested in her work on germs in America that the vacuum

³³⁵ MOSI Archives, 1989.339/486/73 (n.d.), EDA 129.

³³⁶ BVC, (n.d.) 'Goblin Advert' In *Good Housekeeping*: p115.

cleaner became a necessity for a germ-free life, largely because it sucked up dangerous dirt so much more safely and thoroughly than brushing or scrubbing alone.³³⁷ In Britain there were a number of independent studies during the early twentieth century that were hailed by the electrical industry as exemplar of the benefits of vacuum cleaners to health. In particular BVC was awarded the Rogers Field Gold Medal by the Royal Sanitary Institute in recognition of the health benefits of vacuum cleaners. This had been preceded by the use of a BVC machine by Professor Stanley Kent in his experimental research into dust at the Clinical and Bacteriological department of the University of Bristol. He found that 355, 500, 000 living organisms were present in just 1 gramme of dust. The value of these cleaners was reportedly further demonstrated during an outbreak of Spotted Fever at Crystal Palace during World War I when a Booth cleaner was used to remove 23 tons of dust. The ‘...health of the men improved at once, all conventional attempts to control the epidemic having failed.’³³⁸ The selection of these studies by BVC is undeniably in order to promote the benefits of their machines and raises possible questions about omissions. Whilst they are all examples from institutional contexts they illustrate an attempt to associate vacuum cleaners with health in a way that was easily transferable to the domestic context.

The EDA and manufacturers of vacuum cleaners promoted the concept that vacuum cleaners were effective in collecting dirt in order to market them as an indispensable tool in helping housewives to meet rising standards of cleanliness. But by doing this they also linked in with consumer fears about ‘invisible bacteria’. Bacteria could not be seen or smelled, redefining what constituted dirt in the home and how it should be tackled. Modern anxieties about bacteria provided the electrical industry and advertisers with a new approach to marketing their products to the housewife consumer.³³⁹ In the following image (Image 3.6) of an advert for a Hoover from *Good Housekeeping* magazine the vacuum cleaner removes all ‘dirt you can’t see’ as part of a system of dirt collection.

³³⁷ Tomes, N., (1998): p144.

³³⁸ BVC, (1969): p13.

³³⁹ Cox, R. ‘Dishing the Dirt: Dirt in the Home’ in Cox, R., et al. (2011): p44.



Image 3.6. Hoover Advert 1939.³⁴⁰

This advert, as with advertising for vacuum cleaners more generally, played on existing fears over the presence of 'invisible' germs and bacteria and nurtured them. The presence of disease in the family home indicated the housewife had failed to maintain an appropriate degree of cleanliness and care for her family. Rosie Cox has argued that this undermined women's status as guardians of family health and their tacit knowledge as cleaning experts. Instead advertising advised that they turn to the recommendations and products of male manufacturers.³⁴¹ Despite this it remained the housewife's responsibility to maintain the health and welfare of the family, through the preservation of a clean and hygienic environment.

³⁴⁰ Hoover, (1939) 'Advert' In *Good Housekeeping* 35(3): p101.

³⁴¹ Cox, R. 'Dishing the Dirt: Dirt in the Home' in Cox, R., et al. (2011): p54.

Carpets and furnishings

The development of the vacuum cleaner was concurrent with another notable change in modern home design and decor, the introduction of wall-to-wall carpets within British homes. Wall-to-wall carpets became more common in post-war middle class housing, where previously the majority of houses had wooden, stone or dirt floorings that may or may not have been furnished with a rug. Consumers were advised when purchasing a carpet, that important considerations included the amount of wear, its comfort underfoot, its appearance, and the time available for its care and maintenance.³⁴² It is in relation to the last of these that the possession of a vacuum cleaner was most relevant, reducing the time required for care and maintenance due to effective suction cleaning that collected dirt whilst preserving the colours and condition of the carpet. A first-hand account written by John Seymour in a nostalgic account of household tasks, describes the visit of a salesman who demonstrated the effectiveness of the vacuum cleaner for removing dirt from the carpet. He noted that the 'dust was gone in an instant' and that the salesman further demonstrated its effectiveness after emptying the bag beneath the carpet:

His device sucked the dirt up right through the carpet. My mother did not need any further demonstrations. She bought the device straight away and there and then we entered 'the hoover age'.³⁴³

There were a number of changes in the design of early vacuum cleaners to maintain effective cleaning of carpets. In 1920 a revolving brush had been added in order to loosen dirt that had made its way deep into the pile. This was later replaced by revolving bars that would beat the carpet.³⁴⁴

Advertising for vacuum cleaners repeatedly referred to the effective cleaning of different home furnishings as opposed to the exclusive cleaning of carpets. Vacuum cleaners were versatile appliances that could be used on a variety of different furnishings, cleaning not just floors but draperies, furniture, clothing and with the right attachments, even the family dog! Image 3.7., pictured below illustrates its versatility by showing a 1930s woman vacuuming the chair.

³⁴² Science Museum Archives, Trade Literature, Hoover, (post 1956) *The Care of Your Floor*.

³⁴³ Seymour, J., (1987): p91.

³⁴⁴ Seymour, J., (1987): p136.



Image 3.7. 1930s Woman vacuuming a chair.³⁴⁵

This image was produced for the *Electrical Age* and represents the use of a vacuum cleaner by an upper middle class woman. Whilst it shows that a vacuum cleaner can be used in this way to clean furnishings beyond the carpet it does not necessarily follow that it was used by everyone in this way.

The vacuum cleaner did not necessarily live up to the labour and time-saving attributes represented in the advertising. In order to maintain expected levels of cleanliness, more of the housewife's time was required and the process of cleaning became on-going, rather than a one off event in the working week. For example, carpets might get a thorough cleaning with the electric machine once a week, but then a quick run over every day.³⁴⁶ Whilst no time may have been saved, the vacuum cleaner did appear to make cleaning less labour intensive. Specifically it is important not to consider it in isolation from other technologies. The vacuum cleaner was able to do the same work as the broom, dustpan and brush and duster combined, allowing the cleaning of floors, surfaces and crevices, draperies, furniture and clothing.

³⁴⁵ Anon., (1930) 'An indispensable aid to spring cleaning' In *The Electrical Age* 2: p159.

³⁴⁶ MOSI Archives, 1989.339/486, (n.d.), EDA 195. This links back to Ruth Schwartz Cowan's thesis on the creation of 'More Work for Mother' through changing patterns of housework. See Schwartz Cowan, R., (1983).

Vacuum cleaners were marketed as a clean and hygienic way of cleaning a variety of furnishings within the homes of its consumers. It can be related to changing understandings of domestic space in relation to its ability to facilitate the cleaning of this space and the preservation of a healthy home and through the interaction between the vacuum cleaner and the space itself. It is the portability and flexibility of the vacuum cleaner that I wish to focus on in the next section.

Portability and flexibility

The portability of vacuum cleaners allowed them to be moved around the whole house within the limitations of the length of flex and availability of power supply. The problem of flex length is comprehensively outlined in an oral history interview account from electrical engineer Norman Townson:

The vacuum cleaner was quite a problem I remember at first, because it had a fairly short flex on it, so you could just about do one room, especially upstairs, but you couldn't do any of the other rooms, so my Dad put on an extension cable. And looking back on it now, from a health and safety point of view, it wasn't very good, because what he did was put a bayonet plug on the end of the cable that connected to the vacuum cleaner – a bayonet plug is the type that goes into a light socket, and he had a bayonet socket on another length of cable which was the extension, and then he had a three pin plug that went into the wall socket. So the problem with it, obviously I didn't know this at the time, but the problem with it was that there was no earth connection through the bayonet socket, it was only live and neutral, and it could be plugged in either way, so if you were lucky it went live to live and if you were unlucky it went live to neutral, but of course it would work either way round. The problem was that if we'd got an earth fault the vacuum itself could have become live and killed somebody, but it never did. Everybody else though used to do the same because we all had the same problem, everybody had a paucity of sockets so you had to make the most of it.³⁴⁷

Norman Townson's account is evidence that the length of flex on the average vacuum cleaner was insufficient in many working class homes where there was an insufficient provision of wall sockets. He describes one way in which users sought to rectify this problem, by creating their own extension cable. This ability to solve the problem of the flex with a home-made extension

³⁴⁷ Townson, N., Oral History Interview, August 2010.

was not ubiquitous among the working classes since it required specific technical knowledge. Mrs Veneer in Winchester had to call in an electrician to do this for her as her husband had no working knowledge of electricity.³⁴⁸

Not everyone reported a problem with the length of flex. Another oral history interviewee from a middle class family living in Aberdeen, and later Manchester, had an Electrolux machine and extolled its robust and adequate flex:

Well Electrolux length of flex was very good, coiling it up was a pain, but during that period there was no automatic coiler. And generally speaking there were enough main sockets around the house, these fifteen-amp sockets around the house, though you could run a vacuum cleaner on a kilowatt five-amp socket. For the flexible cable, which was well built and quite robustly insulated, and I don't recall the Electrolux, which was an excellent machine, well built, I don't recall having any trouble with the flexible connection there.³⁴⁹

In this case the middle class home of the interviewee had been amply wired with plenty of available sockets in order to get around the whole house. This further reinforces the presence of significant class differences in the use of electric irons and vacuum cleaners in the domestic space and how it is contingent upon the availability of power sources in specific locations.

Many working class homes were only wired downstairs impeding use around the whole house. It is also worth noting that there were many working class households without a vacuum cleaner where it is to be expected that there was a continuation of earlier practices of beating carpets and, scrubbing and white stoning floors. When asked in a 1960 survey by the EAW, the middle class housewives who responded still considered the length of flex to be a problem. They wanted a number of improvements to vacuum cleaners including that they were more mobile, with more secure attachments, and a longer flex so that cleaning was less restricted by the position of sockets. They also felt that the cleaner should be easier and cleaner to empty and that a folding handle would be beneficial for storage.³⁵⁰ The respondents in this survey were predominantly the middle class members of the Association but their responses present some indication of the practicalities of using the vacuum cleaner in the home.

³⁴⁸ Veneer, Oral History Interview, July 2010.

³⁴⁹ Balmer, P., Oral History Interview, September 2010.

³⁵⁰ MOSI Archives, ESI 1/7/7, EAW, (1960) *Electrical Viewpoint: A survey of the user's opinion on electrical equipment in the home: conducted by The Electrical Association for Women*: p7.

Another problem associated with vacuum cleaners as with all electrical appliances was the issue of electrical safety. Norman Townson also made an interesting observation during an oral history interview about the question of safety and electrical appliances from his individual standpoint as a university trained electrical engineer:

I can't remember ever reading any instructions that came with these appliances at the time, saying they must always be used with an earth, or that they should be wired in a certain way. So although my Dad, as I say, knew quite a lot about electricity and radios and things at the time, he was never aware that you should always connect live to live and neutral to neutral and certain appliances should have an earth. People just weren't made aware of the problems at the time, so there must have been many thousands of people throughout the country happily using all these appliances, which quite possibly could be in a dangerous state, although you never really heard of anybody killing themselves using it.³⁵¹

This statement relates specifically to the safety issues associated with creating a home-made flex extension, a use of the machine that was not intended by the manufacturers and thus presumably not considered as a safety hazard. It is also possible that that users didn't really understand the importance of the earth wire with regard to the use of new electrical technologies in the home, and that the industry failed to communicate the importance of electrical safety to its users in the lower classes despite the attempts of the EAW to educate women in the use of electricity. As well as electrical safety in the home the vacuum cleaner also represented a hazard in the form of the trailing flex that might provide a trip hazard to both the user and other individuals within the home during the time it was in use. A characteristic often omitted in the advertising and one that interestingly did not get a mention in the oral history interviews was the noise generated by vacuum cleaners and its impact on the home. It might be assumed despite this omission that this was one way in which vacuum cleaners interacted with and altered the domestic space whilst in use.

The design of vacuum cleaners gave them a degree of flexibility and their use was not limited to the horizontal. Attachable hoses and tools gave it a vertical reach that extended to cornices and other surfaces otherwise out of reach, as demonstrated in Image 3.8.

³⁵¹ Townson, N., Oral History Interview, August 2010.



Image 3.8. Woman vacuuming above the door.³⁵²

This image again is part of trade material designed at promoting vacuum cleaners. It should be noted that it depicts a woman from the 1920s but was included in a pamphlet from 1969 in which the flexibility of vacuum cleaners as illustrated here was still considered a major selling point.

The vacuum cleaner was designed to be both actively used and stored within the home. Cowan has highlighted that technologies are not passive but affect the likely way in which they will be used. Many early vacuum cleaners were designed to emulate a broom for ease of use, but during the 1930s they became more streamlined for both increased portability and in order to reflect the idea of modernity. Forty's work in particular shows how as a mass market for electrical appliances opened up, modern aesthetics became increasingly important. Streamlining allowed the vacuum cleaner to become commensurable with new understandings of the home as a clean and scientifically managed modern space.³⁵³ There are thus contradictions in the design of the vacuum cleaner for use within domestic space. Whilst it is designed for storage within cupboards its streamlined shape also promoted it as a symbol of modernity within the home, making it likely that its display was acceptable, perhaps even

³⁵² BVC, (1969): p5.

³⁵³ Forty, A. (2000).

desirable. In the next section I will look at who was specifically consuming vacuum cleaners in the home to call into question the construction of the housewife consumer from Chapter 1.

3.4. Consumers of Electric Vacuum Cleaners

Throughout this chapter I have referred to the ‘housewife’ as the consumer of vacuum cleaners and as the individual in the household responsible for the health and welfare of the family and the cleanliness of the home. In Images 4.7 and 4.8 it is the middle class housewife who appears as the target of advertising and the constructed user. In this final section of the chapter, I wish to consider other users of vacuum cleaners within the home. I will begin by considering how vacuum cleaners were marketed as a response to the ‘servant problem’ of the 1920s before finally considering alternative users.

The silent servant

At the very beginning of this chapter I introduced the proverb that ‘Cleanliness is next to Godliness’ and discussed how cleanliness has been and is often viewed as an indication of morality. It was also seen as an indication of social class, particularly when we consider who was responsible for the cleaning in different households. Upper and upper middle class households in the 1920s would have been cleaned by servants to a high standard. Industry-wide advertisements produced by the EDA during the 1920s and 1930s presented electricity and vacuum cleaners as silent servants that were reliable and efficient. During the inter-war years the availability of servants diminished. In the aftermath of the First World War, women were receiving a greater degree of education and able to access better paid and higher status jobs. Domestic work no longer seemed a desirable option for those who could do better for themselves. Manufacturers took advantage of the scarcity of servants to market electrical appliances as alternatives.³⁵⁴ However electrical appliances were expensive and were initially only bought by the upper classes for use by their servants as opposed to being a replacement for servants.

The scarcity of servants had repercussions for those who could no longer afford to keep live-in domestic help. The work of historian Pamela Sambrook makes a direct link between cleaning and social status in wealthy households of the nineteenth and early

³⁵⁴ Schwartz Cowan, R., In Mackenzie, D., & Wajcman, J., eds. (1993).

twentieth century. She does this through looking at the employment of servants.³⁵⁵ Whilst upper class households would still be able to afford servants, live-in domestic help was no longer common among middle class households where housewives took on a greater domestic role and relied on help from dailies. Thus for the middle classes in particular, the use of electrical appliances such as vacuum cleaners became increasingly important in enabling the housewife to meet modern standards and maintain her social status, in the absence of servants.³⁵⁶ Those who worked with dirt were often themselves labelled as dirty. However, as middle class women took on more of the household cleaning themselves this changed. Adverts emphasised that vacuum cleaners could be used in cleaning without making the user dirty. For example the EDA employed the following slogan in its campaign to promote electricity to the masses, 'With the help of electricity you can do housework without making more work, and clean the Home without making yourself dirty.'³⁵⁷ Changing attitudes to dirt and cleanliness were important in promoting vacuum cleaners as acceptable replacements to servants for middle class women.

As well as the ability to afford servants the ownership of a vacuum cleaner had also initially been a marker of social status. In addition to the use of the vacuum cleaner by servants, an element of the social status of the consumer was reflected in the make of vacuum cleaner that they owned. In fact Selfridges, an upper middle class department store, became the first dealer in the Hoover, suggesting this American product was considered to be more up-market than its British counterparts. It is worth noting here that the Hoover rapidly spread throughout Britain, among all classes and today its brand name is often considered synonymous with vacuum cleaner.

In her work on America and cleanliness, Suellen Hoy makes the claim that husbands also played a role in the maintenance of cleanliness by providing tools for the housewife, 'Ideal husbands were to make their wives' work easier and their homes cleaner by providing them with up-to-date equipment and conveniences.'³⁵⁸ This translated to Britain through the advertisements of American products on the British market. In the October 1937 issue of *Good Housekeeping* a Christmas themed advert for the Hoover was specifically aimed at husbands with the phrase, 'Give her a Hoover, she knows it's the best.'³⁵⁹ The social cachet of owning a vacuum cleaner, and a specific make of vacuum cleaner, was just as important to the man of

³⁵⁵ Sambrook, P. quoted in Cox, R. 'Dishing the Dirt: Dirt in the Home' in Cox, R., et al. (2011): p47.

³⁵⁶ See for similar arguments about the servant problem in America, Palmer, P., (1989); Schwartz Cowan, R., In Mackenzie, D. & Wajcman, J., eds. (1993).

³⁵⁷ MOSI Archives, 1989.339/486/73 (n.d.) EDA 129..

³⁵⁸ Hoy, S., (1995): p156.

³⁵⁹ Hoover, (1939) 'Advert' in *Good Housekeeping* 32(2): p147.

the household who provided for his wife and benefitted from the clean and moral appearance she preserved in the home.

Other users

John using the vacuum cleaner.



Image 3.9. 'Children in the Electrical Home'³⁶⁰

The 'housewife consumer' and servants were not the only users of vacuum cleaners in the home. One example from an oral history interview, gives an alternative user:

...in Aberdeen they had a vacuum cleaner, which was Electrolux, and she introduced me to the art of vacuum cleaning, which I actually liked. I still do the vacuum cleaning and that Electrolux was also long lived and came to Manchester with us, an excellent machine.³⁶¹

The interviewee, a gentleman who had grown up in a middle class family and was taught to vacuum by his mother, later divulged that he liked the vacuuming as a boy because it involved

³⁶⁰ Coulson, D., (1951) 'Children in the Electrical Home' In *The Electrical Age* 5(10): p426.

³⁶¹ Balmer, P., Oral History Interview, September 2010.

a machine, 'I could shove it around. Initially, I think when I got a bit older it palled slightly, but I didn't mind it.'³⁶² His experiences highlight how individual the assignment of household tasks between different members of the family was. In this instance he was using a technology that was envisaged by the industry to be primarily used by the housewife. In another example from an article on 'Children in the Electrical Home' by Dorothy Coulson in the *Electrical Age*, her son John (pictured in Image 3.9.) '...is also quite a ready volunteer when I get out the vacuum cleaner and he enjoys doing the carpet which frees me to do another job so I am always open to accept his kind offer.'³⁶³ This article is written to describe the acceptance and adoption of electricity and chosen for the publication in order to promote the use of electricity. It is unclear whether it was commissioned as such but cannot be taken as representing common practice without being considered alongside other sources. The fact that our interviewee described formerly also did the vacuum cleaning suggests this was the case in some middle class houses. The gender division of roles within the home, something which I want to focus on more specifically in Chapter 5 on leisure in the home, here appears to be less clear cut than we might expect from the prescribed roles described in the advertising material above.

3.5. Conclusion

Electric irons and electric vacuum cleaners quickly reached large numbers of consumers in the 1920s and into the 1930s. The use of electric light sockets as a power supply source for irons aided their adoption in British homes ahead of the construction of the national grid. Electric irons were the most widely used electrical appliance during the first half of the twentieth century and eased the time consuming and labour intensive nature of maintaining a clean and neat appearance. The notion of cleanliness was intertwined with the appearance of morality and social class. Electric irons are one example of how the domestic space in which they are used is influenced and altered while they are in use. The space was transformed by the heat of ironing, as well as the trailing flex and the altered physical arrangement of the space to provide a platform for ironing on. Vacuum cleaners were similarly a portable appliance that could be used anywhere in the home within the limitations of flex length and the availability and location of power sockets. Vacuum cleaners were marketed within constructions of the ideal modern home that was both clean and hygienic. In the absence of servants, the consumption of electrical vacuum cleaners offered a means of preserving social

³⁶² Balmer, P., Oral History Interview, September 2010.

³⁶³ Coulson, D., (1951) 'Children in the Electrical Home' In *The Electrical Age* 5(10): p425.

status and facilitated the ability of housewives to meet the rising standards of cleanliness demanded by modernity. Vacuum cleaners allowed dangerous dust and dirt to be collected efficiently and can be related to changes in the design of the domestic space. Experiences of electricity and, the use of electric irons and vacuum cleaners more specifically, were highly individual. It can, however, be linked to a uniform notion of modernity linked to cleanliness and an outward moral presentation as a sign that the housewife was fulfilling her role in caring for the wellbeing of the family and maintaining their social status. The established and accepted notion that vacuum cleaners would have been used by housewives, or in some cases servants, is brought into question by the testimony of an oral history interviewee, who claimed to have done the vacuuming as a boy. Having focused on constructions of modernity as cleanliness in this chapter I propose to turn my attention to the importance of hygiene in the modern home in Chapter 4.

Chapter 4

Hygiene

Modern democracy called for lifts and labour saving devices, for hot water-taps and (horrible invention!) drinking water taps, for gas rings and electric ovens.³⁶⁴

Evelyn Waugh, 1928, *Decline and Fall*.

In this 1928 quote from *Decline and Fall* the author Evelyn Waugh described 'modern democracy' as encompassing a need for both gas rings and electric ovens in the home, highlighting tensions between gas and electricity in the modern kitchen. Waugh came from a middle class and well-educated family background.³⁶⁵ At the time of writing *Decline and Fall*, he was a struggling writer but held values similar to those associated with the Bloomsbury set. Thus the description he offers is from a perspective set apart from the majority by his education and his belief in the importance of the arts. This extended to an interest in modernist art as well as literature. This quote, and in fact the novel more broadly, represents the experience of the elites but brings to the fore a number of questions that I wish to explore within this chapter. First the quote in its description of modern implies that these are the characteristics necessary for a modern home. The pairing of gas and electricity might lead us to ask questions about the changing relationship between gas and electricity supply with regards to the process of cooking food in the home. To what degree did people replace the open range with gas and/or electric cookers in their kitchens? I will begin this chapter with a consideration of this electrification of an existing technology to provide further insights into the competition between the gas and electricity industries and how the electric cooker interacted with the domestic space of the 1930s kitchen. The incorporation of new appliances into the existing spaces of the home had a two-way impact upon the design and the interactions with the space

³⁶⁴ Waugh, E., (1928): p117.

³⁶⁵ Stannard, M., (2004) 'Waugh, Evelyn Arthur St John (1903-1966)' In *Oxford Dictionary of National Biography*, Online Edition.

[<http://www.oxforddnb.com/view/article/36788>, accessed 2 Sept. 2011].

Waugh designed modernist book jackets for the publisher Chapman and Hall, the company for which his father worked and gained a reputation as a graphic artist during his time at Oxford.

in which it was installed and used. In this section then, I also want to ask how architectural design of the ideal kitchen space changed during the 1930s and beyond until 1960.

There is a degree of satire in Waugh's work that ridicules the social habits and lifestyle of the elites. In this case, the devices required by 'modern democracy', offered an antidote to the antiquated technologies that remained in use (to the disadvantage of the servants!) at the stately home of Lord Pastmaster.³⁶⁶ The above quote thus prompts questions about the relationships between different classes in society and the supply of power to their homes, something that has already been touched on in chapters 2 and 3 but is a recurring theme in any examination of the consumption of electrical appliances. Who does Waugh conceive of as participating in this 'modern democracy'? The story is suggestive that the neighbours had already bought into this concept of modernity to facilitate comfort in their homes despite their local pride in the historic but impractical stately house: 'Rushlights still flickered in the bedrooms long after all Lord Pastmaster's neighbours were blazing away electricity...'³⁶⁷ The use of democracy in conjunction with the term modern implies that as Britain was modernised there would be greater equality, perhaps even the emergence of a classless society. This also reveals an interesting contradiction between a desire for modernity and a reverence for the traditional within the home environment. Class differences in the construction of consumers, and the adoption and use of technologies will be recurring themes throughout this chapter.

Having examined the situation of electric cookers in the ideal modern kitchen, I want to move on in the second half of the chapter to explore the emergence of domestic refrigeration in the 1930s as a new technology designed to be situated and used in the same space as electric cookers. In particular I want to ask how the electrical industry constructed the consumer and courted consumer choice to generate and exploit a new consumer market. Don Slater's work on consumer culture and modernity raises the complex idea of the co-construction of these two concepts that are inherently linked to one another in their very nature. Consumer culture is both a product of industrial modernisation and a driving force behind it. In addition the very process of consuming is a means of participating in the new and the modern.³⁶⁸ Adverts of the 1920s onwards sold not only consumer goods but a notion of modernity, implying that consumption was the means of achieving specific forms of modernity in everyday life. In chapter 3 this was shown to be a clean, efficient and economic ideal of modernity. I want to expand this definition of modern and that implied in the opening quote from Waugh and argue that the electrical industry drew upon the rhetoric of hygienic

³⁶⁶ Waugh, E., (1928): p116.

³⁶⁷ Waugh, E., (1928): p116.

³⁶⁸ Slater, D., (1997): p9.

modernity that was employed with a different interest and agenda by public health practitioners from the 1930s. Throughout I will aim to consistently contrast the ideals projected by the electrical industry with evidence of the lived reality for individuals within Britain and show the variety of uses and experiences associated with these technologies.

Before I begin I would like to offer a quick note on gender. The technologies I am focusing on this chapter are related to the work processes of cooking and the space of the kitchen, both of which are historically associated with the role of women. The kitchen was, as Domosh claims, a significant site for confirming gender and sexual identity.³⁶⁹ Floyd takes this further in his 2004 article to note that the kitchen has long been perceived as a seat of women's oppression. It is seen as a 'zone of feminine subjection, where women must manage a ceaseless routine of work to the satisfaction of people further up the domestic, social and political hierarchy.'³⁷⁰ Whilst feminist theories see the design of houses as embodying the exploitation of female labour by men, the efforts of women to plan their kitchens (that we will see later in the chapter) in such a manner as to reduce labour and free up time, appears to counter this claim. In addition Floyd makes the claim that cooking technologies help to break down the social boundaries constructed around and within the kitchen by allowing individuals to prepare their own food, rather than it being the exclusive realm of women.³⁷¹ There are numerous examples of discourse on the role of women and the kitchen and whilst a study of this space must necessarily centre on women, I have chosen to place my focus on class differences. This is because the technologies considered in this chapter are large consumer items that were not universally affordable. The choices behind their consumption can thus reveal much about the modern ideals that they represent to the consumer and their social significance. I will consider gender differences within the home more fully in Chapters 5 and 6 of the thesis.

4.1. The Electrification of an Existing Technology: Electric Cookers

Electric cookers offered an alternative to pre-existing cooking technologies and an example of an existing technology in the home that was electrified. At the end of the nineteenth- and turn of the twentieth-century the majority of homes relied on a solid fuel stove or kitchen range to provide heat for cooking and heating the home. In her autobiography, *Hot Bread and Chips*, published in 1963, Elizabeth Flint describes the central

³⁶⁹ Domosh, M., (1998): p277.

³⁷⁰ Floyd, J., (2004): p62.

³⁷¹ Floyd, J., (2004): p62

position of her working class mother's stove in the home at the beginning of the twentieth-century:

Mum was house-proud over her stove. I do not recall the stove being anything but shiny and gleaming. Mum would do battle with anyone over the brightness of it. It was her sole way of assessing another woman's ability as a housewife; I can see her in my mind's eye, and hear her as she used to say, "Seen your Aunt Rose this afternoon I have. Her stove's a disgrace to the family".³⁷²

The solid fuel stove described here held a significant position in relation to the space of the home, being the focus of the living space, and source of heat for activities like cooking, drying, and heating. Flint's description of her mother's pride in the stove also suggests that it was a socially significant symbol of her ability as a housewife.³⁷³ The importance placed on the stove as a symbol of housewifely ability is thus influenced by the life history and contemporary social milieu in which it was recalled and ideally should not be considered in isolation. It is, however, reminiscent of the social importance of cleanliness in the early twentieth century as an outward moral presentation of the respectability of the family that I explored in Chapter 3 of this thesis.

As gas and electricity became available throughout Britain, gas and electric cookers began to replace the solid fuel stove and range as a means of cooking food. Electric cookers in particular were marketed as clean, efficient and economical. In addition both the gas and electrical appliances were built as a standalone unit that could be situated in a variety of spaces depending upon the individual homes in which they were used. For instance this might be next to the range in the living room, in the scullery or in the kitchen. I will return to the specific design of electric cookers in more detail below but first I would like to turn my attention to the development of the kitchen spaces in which it came to be used and the application of scientific management and efficiency principles to these spaces.

³⁷² Flint, E., (1963): p17.

³⁷³ Rosina Harrison similarly describes the importance of the kitchen range and maintaining it in her home during the first decades of the twentieth century. See Harrison, R., (1975): p5. These are individual second hand case based in childhood recollection and as such its reliability is undermined by the fact that the information has been constructed, reconstructed and recalled, as with all oral history and reminiscent accounts.

The ideal modern kitchen?

In Waugh's quote the 'modern' is specifically associated with house design. In Chapter 2 the relationship between the architecture of modern housing and the supply of electricity was discussed. In this section I now wish to focus more specifically on the design of the kitchen space. The Edwardian kitchen, prior to the introduction of electricity often contained a large kitchen range for cooking and heating, and a dresser containing crockery and cutlery, positioned around a large table in the centre of the room.³⁷⁴ For the upper and middle classes it was the domain of the servants, relegated to the basement or back of the house where the noise and heat would not disturb the primary living spaces. With the decline of servants, particularly in middle-class households, the kitchen took a more central location in house design to facilitate accessibility for the housewife.

In contrast among the working classes it was a space that often functioned as the primary living space. The concept of a defined 'kitchen' space did not exist within many forms of working class housing prior to 1918. The functions of the kitchen in the standard home were divided between a living space, in which meal preparation took place, and the scullery.³⁷⁵



Image 4.1. *Daily Herald* image of 1930s slum dwelling interior.³⁷⁶

³⁷⁴ Harrison, M., (1972): p129.

³⁷⁵ HMSO, (1918) [Cd. 9191] *Local Government Boards for England and Wales, and Scotland. Report of the committee appointed by the President of the Local Government Board and the Secretary for Scotland to consider questions of building construction in connection with the provision of dwellings for the working classes in England and Wales, and Scotland, and report upon methods of securing economy and despatch in the provision of such dwellings.*

³⁷⁶ Interior of a Slum dwelling in 1930s. Science and Society Picture Library, Daily Herald Archive, Inv. No. NMP/DHA0318 CAT/84/3, (1930s).

For the very poorest in society, one small living space in which the functions of these rooms would be carried out is all that was available. Image 4.1. is a photo of the interior of a slum dwelling in the 1930s taken for the *Daily Herald* newspaper. The cramped nature of the space, in which the sink is practically next to the kitchen range, gives the impression it is small and inadequate in size. As a newspaper image it is most likely posed in order to shock readers about the condition of the working classes who were condemned to live in slum housing. The two small children playing by the fire create an awareness for their plight as innocent victims of poverty. The problems of slum housing were a contemporary social concern, and the development of municipal housing, and provision of public services during the interwar and post war years was given much consideration by central and local government but solutions were slow to be enacted. In a 1944 government report on the *Design of Dwellings*, the use of a coal range was considered to be almost universal in housing built by local authorities between the wars, but was being gradually replaced by electricity or gas as the provision of public services spread. According to the report:

The gas or electric cooker is, however, usually placed in the scullery, and most of the weekly cooking is now carried out there instead of on the coal range in the living-room. The natural tendency has been for all the kitchen equipment, including the dresser, to follow the stove into the scullery, where most of the week-day meals are now taken.³⁷⁷

The Report proposed that future municipal housing included a kitchen of this sort, ‘a pleasant living room, large enough for the table and all the kitchen fittings and equipment and easy to keep clean and tidy’, and should also incorporate a utility room in which the laundry and other dirty household chores could be completed.³⁷⁸ The kitchen as it emerged in working class homes would become a place that was in principal dedicated to food production and as distinct from the living space. The proposed plans in this report were limited to the government built municipal housing as a solution to the pressing problem of slum housing. Many working class houses remained as they had been alongside these developments.

³⁷⁷ HMSO, (1944) *Design of Dwellings. Report of the design of dwellings sub-committee of the central housing advisory committee appointed by the Minister of Health and report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing*: p13.

³⁷⁸ HMSO, (1944) *Design of Dwellings. Report of the design of dwellings sub-committee of the central housing advisory committee appointed by the Minister of Health and report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing*: p14.

Historians recognise the emergence of the concept of a ‘modern kitchen’ that was emerging in middle and working class houses during the first half of the twentieth century but specifically in the 1930s. It was a room that was designed by architects, interior designers, home economists and retailers as a rationalised space. It is variously re-imagined and described as a well lit room of reasonable size with tiled flooring. The room is lined with built-in cupboards around a neatly positioned sink (often underneath the window), a cooker and refrigerator. Where the walls are exposed they are tiled, papered or plastered and there is often a table in the centre of the room. The overall impression, ultimately, being that of a rationalised, streamlined space exhibiting a continuous flow of countertops. More specifically, Adrian Forty noted that ‘The characteristics of the rationalised kitchen are continuous working surfaces, with a flow from food store to stove and sink.’³⁷⁹ Similarly and more recently, Oldenziel and Zachaman claim that, ‘The radical innovation of the twentieth century urban, modernist kitchen was the creation of a separate space with modular square appliances, a unified look, an unbroken flow of countertops and counter fronts over appliances, and standard measurements.’³⁸⁰ Scientific rationalism as demonstrated in the continuous flow around the kitchen is thus considered by some historians to belong to the notion of modernity.

This characterisation can be traced to the 1926 Frankfurt Kitchen, designed by Margarete Schütte-Lihotzky for use in social housing, which embodied the continuous countertops and counter fronts described in the above quotes, and the repercussions it had for design. Whilst the Frankfurt kitchen was not the first modern fitted kitchen it was mass produced and installed into large numbers of flats in Frankfurt. The design was shown in ideal kitchens in Britain at a variety of Exhibitions. It did, however take a few years to be incorporated into the model kitchens of the Electrical Industry. Image 4.2. shows a model kitchen exhibited at Kensington Court in 1928 by the Electrical Association for Women (EAW). In this model the kitchen has been equipped with all the latest electric appliances and is organised so as to give the impression of clean and efficient space but the built in cupboards and counter-tops of the Frankfurt kitchen have not been incorporated. As a piece of advertising for electricity and electrical appliances it is more important to display the variety of electrical appliances available on the domestic market and their easy incorporation into existing spaces than to promote the design ideal of the fitted kitchen. As an aside, I would also like to draw attention to the central position of the electric cooker in this model, possibly reflecting the central significance of the range and solid fuel stove it replaced as well as of the kitchen as a space for preparing food, for which it was used.

³⁷⁹ Forty, A., In Cross, N. & Steadman, P., (1979): p47.

³⁸⁰ Oldenziel, R. & Zachaman, K., ed. (2009): p1.



Image 4.2. EAW Model Electric Kitchen, 1928.³⁸¹

Other forums for the exhibition of ideal homes and kitchen design included the annual Daily Mail Ideal Homes Exhibition, first exhibited in 1908. Three model kitchens designed for the Electrical Development Association (EDA) by the prominent architect Walter Goodesmith were put on display at the Ideal Home Exhibition and then at Charing Cross Underground station in 1936.³⁸² In her article, for the Electrical Age entitled “Current” topics’, Joan B Kennedy concluded that the interest of housewives in these kitchens indicated that the installation of complete electric kitchens as practiced in America might be adopted in Britain.³⁸³ Image 4.3 of a model electric kitchen as part of an Aluminium Development Association exhibit on the use of aluminium fittings in the kitchen from 1945 depicts the aesthetic of built in cupboards that was by this time a common feature of ideal kitchen designs. The aesthetic of the rationalised kitchen was not unique to models of all-electric kitchens and was not limited to electrically powered spaces. Both gas and electrical technologies had to fit into the ideal of the new rational kitchen. Image 4.4. shows a model gas

³⁸¹ Anon., (1928) ‘EAW Model Electric Kitchen’ In *The Electrical Age* 1(9): p345.

³⁸² Walter Goodesmith designed and exhibited an all-electric house in 1934. Cranfield, I., (2004): p57.

³⁸³ Kennedy, J., (1936) “Current” topics’ In *The Electrical Age* 3(3): p102.

kitchen that was designed for the Daily Herald Modern Homes Exhibition in 1946 that was held at Dorland Hall on Lower Regent Street in London.

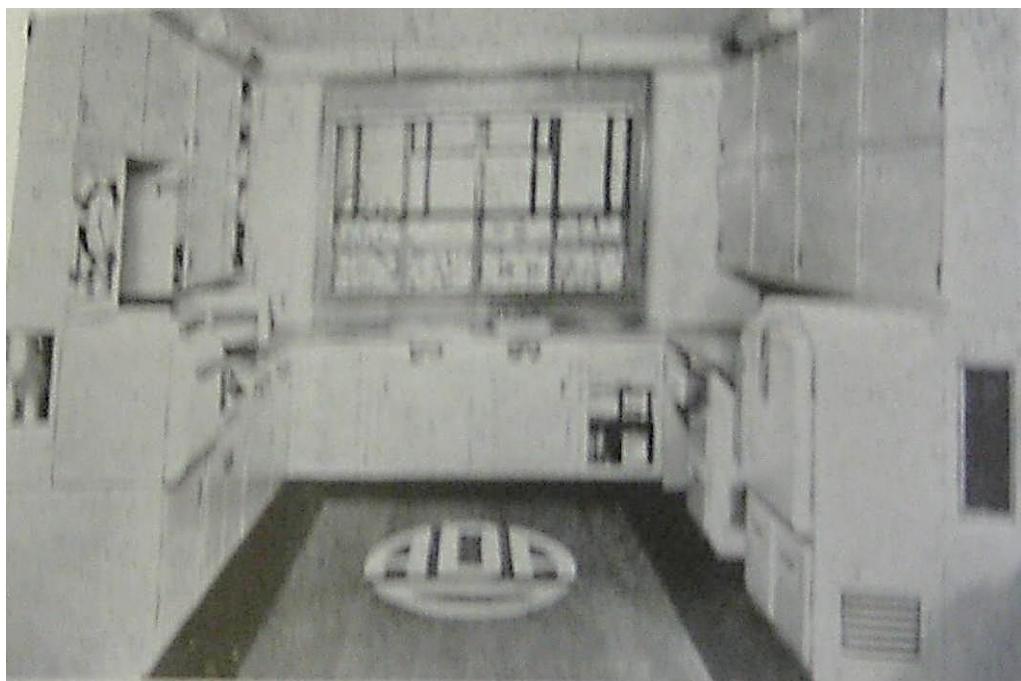


Image 4.3. Aluminium Development Association Ideal Kitchen, 1945.³⁸⁴



Image 4.4. Gas Kitchen at Daily Herald Modern Homes Exhibition, 1946³⁸⁵

³⁸⁴ Anon., (1945) 'The Future in the Kitchen' *The Electrical Age* 4(12): p394.

³⁸⁵ Science and Society Picture Archive, Daily Herald Archive, Image No. 10308559, (1946) Gas Kitchen at the Daily Herald Modern Homes Exhibition

These model kitchens were all designed for incorporation into the middle class home, since they make use of a large space and are fitted out with a large number of appliances that would at this time still have been beyond the affordability of working class homes. The designs were also based upon the Taylorist principles of household efficiency that characterised the American efficiency movement and had been put into practice with the earlier Frankfurt Kitchen.

Scientific management in the modern kitchen

In 1913 the publication of *Housekeeping: Efficiency Studies in Home Management* by Christine Frederick had prompted the American Efficiency Movement and the arrangement of rooms using Taylorist principles and time and motion studies to streamline domestic processes.³⁸⁶ It had implications for the situation of rooms in relation to each other and the organisation of appliances within them.³⁸⁷ The application of scientific management to the kitchen planning through time and motion studies involved the rearrangement of the kitchen in order to minimise the amount of movement by the housewife around the kitchen.

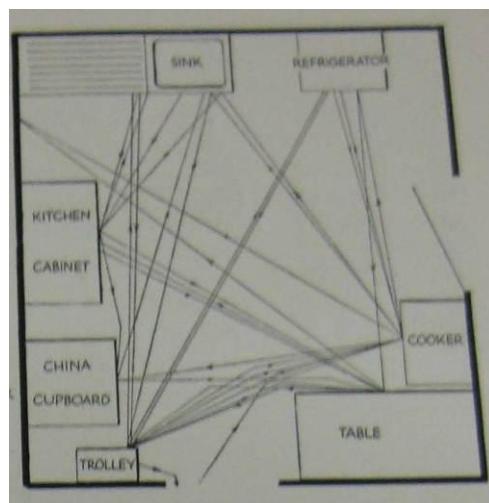


Image 4.5. 199ft. in 18mins.³⁸⁸

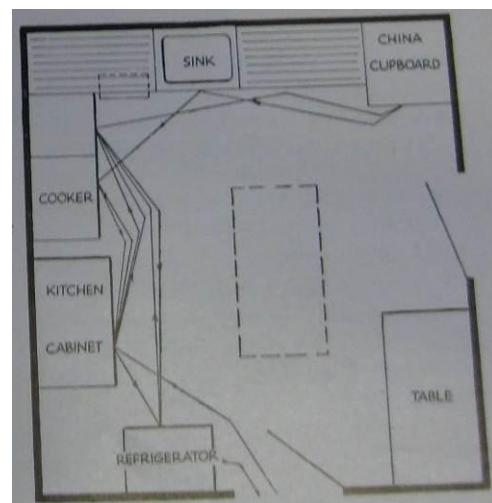


Image 4.6. 55ft in 11mins.³⁸⁹

³⁸⁶ Aynsley, J. & Grant, C., (2006):p205. Taylorism as defined by the Oxford English Dictionary is the practice of scientific management and work efficiency through a system developed and expounded by American Engineer Fredrick Taylor (1856-1915) Time and motion studies had been developed by Dr Lilian Gilbreth in America. Both Taylorism and time and motion were successfully applied to an industrial context to increase efficiency and lessen the fatigue of the workers before being applied to the home.

³⁸⁷ For example Reiss' housing handbook recommended that the living-room and kitchen-scullery be adjacent for convenience as well as offering recommendations for the arrangement of furnishings within these rooms. Reiss., (1924): p57.

³⁸⁸ Anon (1937) 'Editorial: Kitchen Planning and Fatigue Study in the Home' In *The Electrical Age* 3(5): p169.

Images 4.5. and 4.6. show two plans from an editorial in the *Electrical Age* in 1937 that reveal how rearranging the kitchen can reduce the distance covered by the housewife during the preparation of breakfast from 199 feet to 55 feet and consequently the time taken in preparation from 18 to just 11 minutes. Numerous articles in the *Electrical Age* during the 1930s, 1940s and 1950s that focus on scientific management are testament to a sustained interest by the Association. The women involved in running the Association were, however, predominantly from the upper echelons of society with a middle class audience. As an important link between the upper and middle class consumer and the industry, the EAW conveyed the benefits of applying principles of scientific management to the kitchen and helped to generate a market for electrical appliances. The dissemination of ideas by the EAW, relating to the scientific and efficient running of the household, are however, unlikely to have been extensive or far reaching as a consequence of its limited audience. Alternative media, through which these theories will have reached a wider audience and impacted upon practice, whether directly or indirectly, included popular magazines such as *Good Housekeeping* and Domestic Science syllabuses.

They were also perpetuated through cookbooks and user manuals for different appliances. In a guide to the use of the electric cooker, produced in 1937, Ester Purvis recommends that:

Every woman should arrange her kitchen appliances to save labour. Fixtures such as the sink, of course, cannot be altered, but the position of the cooker, cupboards (or dresser) and the table, should be considered from the point of view of obviating unnecessary walking from one appliance to another.³⁹⁰

Of course there is still no way of accessing how many people purchased this manual or how many such manuals were in circulation at this time, making it difficult to assess its impact as a medium for popularising principles of scientific management. The reference to cupboards or the dresser, in this quote, indicates that it was not expected that all households would have a fully fitted kitchen but that the principles of scientific management and kitchen planning could be applied regardless of the type of kitchen to ensure the most efficient use of the space available.

³⁸⁹ Anon., (1937) 'Editorial: Kitchen Planning and Fatigue Study in the Home' In *The Electrical Age* 3(5): p169.

³⁹⁰ Purvis, E., (1937): p21.

When applied to the home, three functions of the kitchen are identified and it is the arrangement of the associated appliances in relation to each other that gives effective kitchen planning:

Broadly, the functions of the kitchen are three: storage, that requires a refrigerator and food cupboards; preparation that requires a cooker, a surface and serving centre; cleaning up, that requires a sink and hot water supply. The technique of good kitchen planning is skilful arrangement of the three centres in relation to each other.³⁹¹

The source of this quote is an article in the *Electrical Age* and it is part of the EAW's campaign to promote the use of electricity. In this case it is through the use of appliances alongside efficient kitchen planning, but the arrangement of appliances was also a concern of domestic scientists and kitchen designers. In the 1940s the positioning of the sink, cooker and refrigerator in relation to each other became known as the 'work triangle', a concept that was first used in America and is now recognised in relation to all kitchen design and something which I will return shortly.

So far in relation to the kitchen I have relied upon ideal constructions of the modern kitchen as envisaged by the government, the electrical industry and its associations, kitchen designers and domestic scientists. In practice individual kitchens would have varied greatly in space, design and the appliances it incorporated. In her 1999 book on the *Geography of the Home*, Aliko Bursch looks at how writing about rooms in the home can be used as a way of writing about the people who inhabited and used them. Each space is invested with different meanings and symbolism for the individual using it. In particular she recollects the production of a soufflé with gold leaf on it in her mother's 1950s kitchen, which she goes on to describe as a laboratory:

The experiment with the gold leaf was the kind of alchemy practiced regularly in my mother's kitchen – a laboratory outfitted with red formica counters and fifties style, blond-faux-wood-laminate cabinets. Even to imagine cabinets like this required a leap of faith, but the incongruity of plastic panels posing absurdly as pine planks was exactly the right scenery for this lab. My mother, like most people who know how to cook, understood that what she was doing was science, and that like any other science it required huge leaps of the imagination – at times even acts of faith.³⁹²

³⁹¹ Anon., (1937) 'Editorial: Kitchen Planning and Fatigue Study in the Home' In *The Electrical Age* 3(5): p170.

³⁹² Busch, A., (1999): pp39-40.

The analogy with a laboratory and the scientific nature of the activities that occurred within her mother's kitchen is in all probability an imposition of the interests and understanding of Aliko Bursch as she reconstructed her memory of this space. The kitchen like the laboratory is a rational, streamlined space, with clean surfaces and organised work stations. There was a strong rhetoric of scientific management and electrical appliances as tools within advertising for kitchen appliances throughout the first half of the twentieth-century. As early as 1929, in her Presidential address of the fourth annual conference of the EAW, Mrs Wilfred Ashley had observed that, 'Women to-day are more and more interested in the scientific management of their homes; just as men have introduced science and up-to-date tools in their workshops, so women feel their own workshop, the kitchen, should be run on scientific lines with modern tools.'³⁹³ Whilst this scientific rhetoric was in use throughout the work of the EAW, the electrical industry and domestic scientists, its use in more popular magazines and among housewives themselves is less clear and it is unlikely that the construction of the domestic as scientific was the norm outside of these specialist arenas.

Having explored the arrangement and management of kitchen spaces, I would now like to return to the specific appliances within it, and for the moment electric cookers. Returning to the concept of the work triangle, Image 4.7., from a 1936 Moffat electrical appliances advert offers a representation of not only the ideal fitted and rational kitchen but also of the ideal relationship between the refrigerator, sink and electric cooker.



Image 4.7. Moffat Electrical Appliances advert, 1936.³⁹⁴

³⁹³ IET Archives, NAEST 33/2.11.1, (1929) *What women think about Electrical Development in Great Britain, U.S.A., Holland, and Germany: Being report of proceedings of the fourth annual conference held at the North-East Coast Exhibition, Newcastle-on-Tyne, July 10th-12th*: p4.

³⁹⁴ Moffat, (1936) 'Advert' In *The Electrical Age* 3(1): p39.

The appliances are situated in such a way as to provide a continuous flow of countertop between the storage of food in the fridge, the preparation of food by the sink and the cooking of food. One of the virtues of electric cookers that was recognised in the planning of the kitchen was its capacity to be situated in any convenient position. Ester Purvis, introduced earlier as the author of *The Electric Cooker and How to Use It* in 1937 praised its ability to placed anywhere in the room, so that the kitchen could be arranged for maximum efficiency depending on the available space. Purvis claims that this need not be against a wall but that '...it can be placed beside the kitchen table, if it should so prove more convenient.'³⁹⁵

Furthermore advice on kitchen planning produced by the EAW in the same year recorded that:

In actual experiment it has been shown that even in well-planned kitchens cooking may be responsible for about three quarters of the total working time, washing and cleaning the kitchen accounting for the remainder.

The cooker should be as near as possible to the sink and working space so that the amount of walking during preparation of meals is reduced to a minimum. The modern electric cooker lends itself admirably to this purpose.³⁹⁶

Advertising such as this indicates that the industry was trying to sell the ideal kitchen space as a consequence of the appliances it contained and as achievable with the purchase of such products. The appliances and the kitchen became mass-produced and mass-consumed products during the inter war and post war years, embodied in the proliferation of exhibitions and advertising to sell ideals of the home. In his work on consumption, Matthew Hilton proposes specifically that the Festival of Britain exhibition in 1951 recognised a consumer orientated society that had emerged in post-war Britain and projected ideals of the modern future that awaited Britain.³⁹⁷ This can be applied to the variety of other ideal home exhibits I have introduced throughout this chapter. In fact, design historians Jeremy Aynsley and Charlotte Grant considered that model interiors displayed at such exhibitions showed the increasing public interest and were '...designed according to moral as well as aesthetic principles' that 'became a potent symbol for a future, better society.'³⁹⁸ The situation of electrical appliances in the ideal kitchen space in advertising from the 1930s promoted the consumption of both these notions of this modern domestic space and of the electric appliances which could be used within them.

³⁹⁵ Purvis, E., (1937): p22.

³⁹⁶ IET Archives, NEST 33/2.11.5, (1937), *Practical Aspects of Kitchen Planning*: p5.

³⁹⁷ Hilton, M., (2003): p145.

³⁹⁸ Aynsley, J. & Grant, C., (2006): p188.

Consumers of electrical appliances for the kitchen also consumed the notion of the ideal scientifically managed and rationalised kitchen within which these appliances were depicted in adverts and at exhibitions. There would however have been large social and regional variations in the levels to which these aspirational ideals were achieved within the actual spaces of people's homes, where rooms would have varied in size and the locations of windows and power sockets etc. would have determined room arrangements. The same can be said of other technologies that were displayed within the ideal modern kitchen, for instance Formica and Laminate surfaces, or gas competitors to electricity. In the following section I will discuss competition between gas and electric cookers on the domestic market.

Electric vs. gas cookers

In Chapter 2, I introduced the competition between the electricity and gas industries for consumers and noted how in the 1930s the gas industry turned its attention to heating and cooking. Electric cookers were competing heavily with gas cookers. In advertisements and trade material electricity was promoted as being cleaner and cheaper than gas cooking. In a 1914 manual on electric cooking and cleaning Maud Lancaster praised electricity as the cheapest means of carrying out slow cooking alongside its virtues of 'the great saving of labour, the absence of dirt, and the better sanitary and hygiene conditions which accompany electrical operation'³⁹⁹ The electricity and gas industries also competed through the design of their appliances. Below are two images of an electric cooker and a gas cooker from 1927.

³⁹⁹ Lancaster, M., (1914): p3.



Image 4.8. GEC Magnet Cooker, 1927⁴⁰⁰



Image 4.9. National Gas Council cooker, 1927⁴⁰¹

The GEC magnet electric cooker, Model HO 920 pictured in Image 4.8 has a double glazed glass oven door, and enamelled interior, 3 hotplates, and a thermometer.⁴⁰² The No. 2 'Standard' cooker in Image 4.9 represents an early attempt of the Gas Council to standardise the design of their cookers. The production of a thermostat by Moffats in 1936 (pictured in Image 4.10.) was a feature of their electric cookers that was used to market them as superior to gas.



Image 4.10. Moffat Thermostat⁴⁰³

⁴⁰⁰ Science and Society Picture Library, Science Museum, Inv. No. 1967-0118, (1927) GEC Magnet electric cooker Model HO 920. Manufactured in England between 1925 and 1930.

⁴⁰¹ Science and Society Picture Library, Science Museum, Inv. No. 1962-0091, (1927) No. 2. 'Standard' gas cooker, National Gas Council design.

⁴⁰² The design feature of including a 2 pin socket is in all probability symptomatic of the limited supply of sockets in the home during this period as discussed in the prelude to this chapter.

⁴⁰³ Moffat, (1936) 'Advert' In *The Electrical Age* 3(1): p83.

However, it did not become a universal feature of electric cookers as can be seen from its absence from the G.E.C. electric cooker in Image 4.8. Electrical suppliers were competing with each other as well as with gas suppliers. Whilst by 1939 thermostatic control, fast boiling plates and even microwave ovens had become technically possible design innovations were discouraged by the continuance of hire systems for electric cookers and concerns of the electricity companies about obsolescence in favour of their gas competitors.⁴⁰⁴ The nascent electric cookers had often emulated their gas predecessors but took on their own design, specifically as they became more streamlined during the 1930s. After this time the design of gas cookers also altered to become more streamlined. Anne Clendenning remarks on the importance of aesthetics in design and commercial success of an appliance that was recognised by the gas industry.⁴⁰⁵ A Male visitor at the 'Britain Can Make It' Exhibition in 1946 observed that, 'The gas companies have improved their cookers by copying the pattern of the electric ones – but you get such a corrosion with gas.'⁴⁰⁶

A female respondent to the same audience questionnaire as part of Mass Observation identified an electric cooker as most desirable appliance on display, 'Well I've got a gas one but I always prefer electric. In response to the question why she stated, 'Well it's so much cleaner and less trouble and that.'⁴⁰⁷ In contrast, in 1947 Compton Mackenzie made the claim in his British Gas Council published book *The Vital Flame that*, 'To-day gas cooking is used in nine million homes in Britain. And now with another war behind them, housewives may expect further improvements in gas cookers.'⁴⁰⁸ He went on to add that, 'In fact I have met only one woman anywhere who liked electric cooking better than gas, and she was far from being a good cook.'⁴⁰⁹ He demonstrates that gas was still a popular alternative to electricity for cooking in the home. A further survey in 1950 on patterns of British life found that in four out of five households in Britain:

When both gas and electricity are available, most prefer to cook by gas. Perhaps this is just another manifestation of the British passion for the naked flame; perhaps it is lack of initiative or of money to change over from something that was installed first.⁴¹⁰

⁴⁰⁴ Forty, A. In Cross, N. & Steadman, P., (1979): p55.

⁴⁰⁵ Clendenning, A., (2004): p208.

⁴⁰⁶ Mass Observation Archive, TC26 5/D, (1946) 'Britain Can Make It' Exhibition, M.50.C (69). Results from a survey conducted about domestic appliances among visitors to the Britain Can Make It Exhibition.

⁴⁰⁷ Mass Observation Archive, TC26 5/D, (1946), 'Britain Can Make It' Exhibition, F/52/C.

⁴⁰⁸ Mackenzie, C., (1947): p35.

⁴⁰⁹ Mackenzie, C., (1947): p36.

⁴¹⁰ Browne, G., (1950): p28.

Despite these claims that consumers preferred to cook with gas, electric cookers successfully persisted on the domestic market. Estimates for the percentage of households owning electric cookers in 1938 suggest that around 18% of all households owned one in 1938. In 1948 this had risen only slightly to 19%, comprising 21% of the upper and upper-middle-class households, 23% of lower middle class households and 17% working class homes.⁴¹¹ By 1963 only 35% of households owned an electric cooker, of which the majority were in upper and upper middle class households.⁴¹² The persistence in a preference for gas cooking and thus the persistence in gas supply alongside electricity is an illustration of the complex relationship and interplay between the two competing industries.

Electric and gas cookers were both designed and marketed to replace the kitchen range in the clean, rational and streamlined ideal modern kitchen of the 1930s. They were in direct competition with one another on the domestic market. The electric cooker is one example of an electrical appliance that didn't come to dominate the consumer market, since many consumers demonstrated a preference for gas cooking. In many working class homes the kitchen range would have remained in-situ and in use, whilst electricity supply and new appliances remained beyond their means. Marketing for the electric cooker as clean and hygienic was mirrored in marketing for another large electrical appliance in the kitchen – the refrigerator, which is the focus of the next section in this chapter. Unlike electric cookers, gas competitors to electric refrigerators were available in Britain in only small numbers. The principal explanation for this can be found in the predominance of refrigerators of American manufacture on the British domestic market prior to 1939.⁴¹³ Electric models in America had already superseded gas alternatives. Ruth Schwartz Cowan's work on refrigerators provides an in-depth study of the development of domestic refrigerators in America, highlighting how electric refrigerators out-competed gas as a consequence of social and economic factors rather than technical superiority. The development of electric domestic refrigerators for the consumer market was driven by a number of well-established and resourceful companies, backed by the developing electrical supply industry.⁴¹⁴ Thus it was the industry that determined which models were available on the consumer market.

⁴¹¹ From Table 1 in Corley, T.A.B., (1966): p16.

⁴¹² From Table 1 in Corley, T.A.B., (1966): p16.

⁴¹³ EDA, (1952): p145.

⁴¹⁴ Cowan in Mackenzie, D & Wajcman, J., ed (1993): p215.

4.2. Refrigerators and the Constructed Ideal

Situated in the same room and modern imagery as electric cookers, was the comparatively new technology of domestic refrigeration. In this section I will examine how the electrical industry constructed and exploited the potential consumer market for electric refrigerators and courted consumer choice. I will then describe how they did this by drawing upon public health concerns about health and hygiene in their construction of refrigerators as modern. Finally I will look at how refrigerators were part of a system of storage within the ideal modern kitchen described above. In post-war Britain there were numerous models of electric refrigerators available on the consumer market as the industry within Britain itself expanded as competition to imported products. Methods for preserving food quality that were in use in Britain at the turn of the century varied from cellars, pantries and larders to wire safes attached to the north side of the house. The situation of these rooms and spaces to the north of the house was significant to preserve the lowest temperatures possible but they would still have been subject to seasonal changes in the temperature and atmospheric conditions. Furthermore there was little safeguard against the problems of flies, dust, dirt and other contaminants. The basic principle involved in refrigeration is the removal of heat through the evaporation and condensation of a coolant. Electricity was used to provide either heat or to power the circulation of liquids through the refrigeration system.⁴¹⁵ Refrigeration began as a luxury for the minority but became a necessity for the preservation of food stuffs in the home. However, as a large and expensive consumer item, middle class and working class consumers needed to be convinced of its benefits.

The construction of consumers and the concept of consumer choice

As a new technology there was a need for the electrical industry to both generate and exploit the potential consumer market for electric refrigerators in Britain. In order to do this they needed to court consumer choice and thus it was necessary for advertising to target the individual identities of the intended consumer.

In the introduction I outlined the construction of the housewife as the perceived principal domestic consumer.⁴¹⁶ In adverts for electrical appliances the initial depiction was that of the servant user but in the 1930s it became the housewife that was represented. She appears as a well-dressed woman, often in an apron, and engaged in housework. In many

⁴¹⁵ EDA, (1952): p147.

⁴¹⁶ Hilton, M., (2003): p111.

adverts for refrigerators such as the one depicted in Image 4.12., below, the housewife is removed from the domestic setting and appears middle class, reflecting the aspirations of the middle and working classes. As well as constructing the consumer, the industry had to appeal to consumer choice. Don Slater envisages consumer choice as an act of freedom defined by its private nature. It occurs within the private domain of the individual or the household with the intention of increasing the private contentment of the consumers.⁴¹⁷ This definition is particularly apt in relation to consumption of domestic appliances as products which are intended for the particularly private sphere of the home. Consumer choice and agency is both constructed and directed by advertising and marketing strategies and acts against the attempts of industrial and governmental organisations to guide decisions for the collective social benefit of the population.⁴¹⁸

The process of consumption, through which electric refrigerators became a necessity as opposed to a novelty and luxury, was described in this 1932 extract from an article in the *Electrical Age*, 'First it has been introduced as a fashionable novelty; then accepted by the wealthy as a luxury; then treated as an asset to be afforded if possible; and lastly a necessity without which no home can be run efficiently.'⁴¹⁹ It was in the interests of the EAW to present electric refrigeration as a necessity to the housewife and modern home because they aimed to promote electrical power supply and the impression that it was a necessity might prompt further sales. It is not a particularly accurate statement about the consumption of electrical refrigerators, which as will be discussed later were not widespread in use until post 1960. Yet, it does recognise the general process through which new electrical appliances were introduced and consumed as they became increasingly widespread. The same class of women that participated in the EAW were involved in organisations such as the Women's Institute and Townswomen's guild. They all played an important political role in raising the profile of domestic issues and domestic work, but according to Hilton, eclipsed the earlier working-class organisations that voiced the concerns of the ordinary consumer.⁴²⁰

Politically in the 1940s and 1950s the discrepancy between what might be considered a necessary consumer item and what was a luxury was no longer clear. Wants not needs became the defining principle of consumption and state intervention in supply distribution and consumption through wartime controls had to consider 'the rights of consumers to the cheap luxuries, conveniences, customs and simple pleasures of the mass market which they had

⁴¹⁷ Slater, D., (1997): p27-28.

⁴¹⁸ Hilton, M., (2003).

⁴¹⁹ Anon., (1932) 'Modern Housekeeping with the Refrigerator' In *The Electrical Age* 2(9): p367.

⁴²⁰ Hilton, M., (2003): p141.

enjoyed for at least half a century.⁴²¹ In addition during the 1950s the ability to keep up with the Joneses, so to speak, was an important indication of the prosperity and social status of the household.⁴²² Social relations were reproduced through the process of consumption and different goods acted as markers of social class. Within this consumerism could be viewed as becoming amoral and the wants of the consumer becoming insatiable as individuals and social groups were increasingly defined by their consumption.⁴²³

With respect to refrigerators as with other electrical appliances for domestic use, advertising portrayed it as modern, clean, hygienic and efficient in order to generate a consumer market and appeal to the housewife consumer. It is the creation of a specific definition of modernity, to be precise hygienic modernity, to sell refrigerators as a necessity for the preservation of a hygienic domestic environment that I want to focus on in the next section.

Hygienic modernity and domestic refrigeration⁴²⁴

The electrical industry employed a notion of hygienic modernity that built upon constructions of hygiene as promoted by public health practitioners and hygienists. Both groups were using the notion of hygiene as a vision of modern life but with different interests and agendas.

Public health practitioners variously envisaged hygiene as encompassing the prevention of disease, health statistics, health and welfare services, environmental hygiene and personal hygiene. The environmental focus of public health practitioners in the nineteenth century when sanitation was of pre-eminence was gradually altered by the rise of bacteriology and a shift in the early twentieth century to an emphasis on the individual's role in maintaining their personal hygiene. In 1928, Sir George Newman described public health as having changed to become about 'the domestic, social and personal life of the people'.⁴²⁵ Adrian Forty has linked the meaning of the modern home with public health concerns, in the early twentieth century. The meaning of the modern home changed and people began to view it as a space of

⁴²¹ Hilton, M., (2003): p137.

⁴²² Slater, D., (1997): p12.

⁴²³ Slater, D., (1997): p12.

⁴²⁴ Hygienic Modernity is a term that has been used by public health historian Ruth Rogaski, in her work on health and disease in China. I am using it as a concept of the form of modernity constructed by the electrical industry to encourage consumption, based upon contemporary public health concerns.

⁴²⁵ In 1919 Sir George Newman was appointed as Chief Medical Officer to the Ministry of Health, a post which he held until his retirement in 1935. During his professional lifetime he was also actively involved in public health initiatives and served on the Board of Education. Quoted in Fee, E. & Acheson, R.M., (1991): p204.

which the primary function was to facilitate the well-being of the family. A greater emphasis on cleanliness and hygiene in the individual home emerged.

The emphasis on personal hygiene over environmental hygiene occurred alongside professional questions about the differentiation of the role of public health practitioners alongside general medical practitioners. During the 1940s public health was revitalised as social medicine. The health and welfare of mothers and children became a central focus for public health practitioners. Higher standards of domestic hygiene were encouraged as part of an on-going campaign through the first half of the twentieth century to reduce infant mortality. Middle class women who viewed domestic household economies as their domain took on the role of managing and administering public provision of family welfare and the relief of poverty at a local level.⁴²⁶ The social role of public health reflected contemporary political and ideological concerns. Politically, public health was linked to ideas of social solidarity and cohesion that were, according to historian Dorothy Porter, ‘...expressed in liberal democracies in the twentieth century in the concept of social citizenship which became identified with the welfare state as the mechanism for eliminating inequality through policies designed to reduce economic and social disadvantage.’⁴²⁷ Porter’s work discusses how government agendas influenced welfare and health provision to promote social equality and cohesion, of which public health was a part. Additionally ideas of eugenics circulating in the early-twentieth century had an impact on the remit of public health. Concerns over the quality of the population led to an emphasis on promoting the care of maternal and child welfare, in terms of health and hygiene, but also in relation to issues of nutrition.⁴²⁸ This was of particular significance in the aftermath of the war and the impact of rationing. Alongside the rise in the responsibility of the individual for personal hygiene was an increase in public health education. This included health education displays in cinema foyers and work places and a progressive use of different modern media to convey messages about healthy lifestyles.⁴²⁹

Exploiting these public health campaigns and public awareness of hygiene issues, the electrical industry promoted the importance of hygiene as a way to sell refrigerators to the masses. Advertising encouraged consumers to view refrigerators as a scientific solution to problems of maintaining food hygiene and family health. Some examples of adverts drawing on the importance of health and hygiene in relation to domestic refrigeration can be seen in a

⁴²⁶ Porter, D., (1999): p174.

⁴²⁷ Porter, D., (1999): p193.

⁴²⁸ See Porter, D., (1999). And Berridge, V., (1999).

⁴²⁹ Berridge, V., (1999): p21.

1930 Ediswan advert from *The Electrical Age* that uses the slogan, 'safeguard your family's health all year round.'⁴³⁰ And also a later, 1939, advert for the H.M.V. Electric Refrigerator in *Good Housekeeping*:

Modern conditions dictate the need for domestic refrigeration as the only safeguard from food deterioration and contamination. To be kept perfectly safe for children in all climes and conditions, milk and perishables should be put straight into a refrigerator – preferably and HMV – from the moment of delivery. Thereby all foods' wholesomeness and flavour-freshness are preserved, your children's health promoted and food waste avoided.⁴³¹

Both of these adverts draw upon public health notions about the importance of preserving food hygiene and maintaining nutrition, most explicitly in the later 1939 H.M.V. advert. They also both implicitly recognise and reinforce the central role of women in caring for the health of their dependants. They are however targeted at the very upper middle class women who already participated in social welfare roles at a local level. As such they were preaching to the converted and strengthening the desirability of electric refrigerators to the middle class consumer.

To appeal to a wider consumer base the efficiency of the refrigerator in preserving food and contributing to the household economy was stressed in 1930s adverts. As well as the high initial cost of purchasing a refrigerator, it also needed to be powered 24 hours a day, an additional cost that may have seemed unaffordable to the majority of the population, regardless of hygienic benefits. Among working class households during the interwar years, in which the maintenance of a satisfactory standard of living and the provision of adequate food required a degree of sophisticated 'financial wheeling and dealing'⁴³², the costs of owning and running a refrigerator were prohibitive. In 1932 an article on modern housekeeping in the *Electrical Age* contained the estimate that, 'two people are able to save upwards of 5/- a week in careful purchase of food and elimination of waste, making full use of the advantages offered by the electrical refrigerator.'⁴³³ The preservation of food against pests and decomposition became increasingly important in the aftermath of the wartime food shortages. Emphasising the economic nature of refrigeration in making food last longer was an important tactic in

⁴³⁰ Ediswan, (1930) 'Advert' In *The Electrical Age* 1(16): frontispiece.

⁴³¹ HMV, (1939) 'Electric Refrigerator Advert' In *Good Housekeeping* 35(4): p173.

⁴³² Vincent, D., (1991) *Poor Citizens: The State and the Poor in Twentieth-Century Britain* (London): p92. Quoted in Hilton, M. (2003): p110.

⁴³³ Anon., (1932) 'Modern Housekeeping with the Refrigerator' In *The Electrical Age* 2(9): p369.

reconciling consumers to the expense of purchasing a refrigerator and the costs of electricity to power it, as mentioned in Chapter 2.

Electric refrigeration could only live up to advertising promises of efficiency and hygiene when used and maintained in a correct manner. Ensuring the door was opened for minimal lengths of time helped to guarantee that low temperatures were maintained within the refrigeration cabinet. The degree of storage space available within refrigerators became a characteristic that was regularly singled out in advertising (see images 4.11. and 4.12.). Early refrigerators occupied a large amount of space within the home, whilst providing a comparatively small amount of storage space for food. This was no longer the case by the 1950s when the display of the internal space of electric refrigerators was a common feature in advertising.

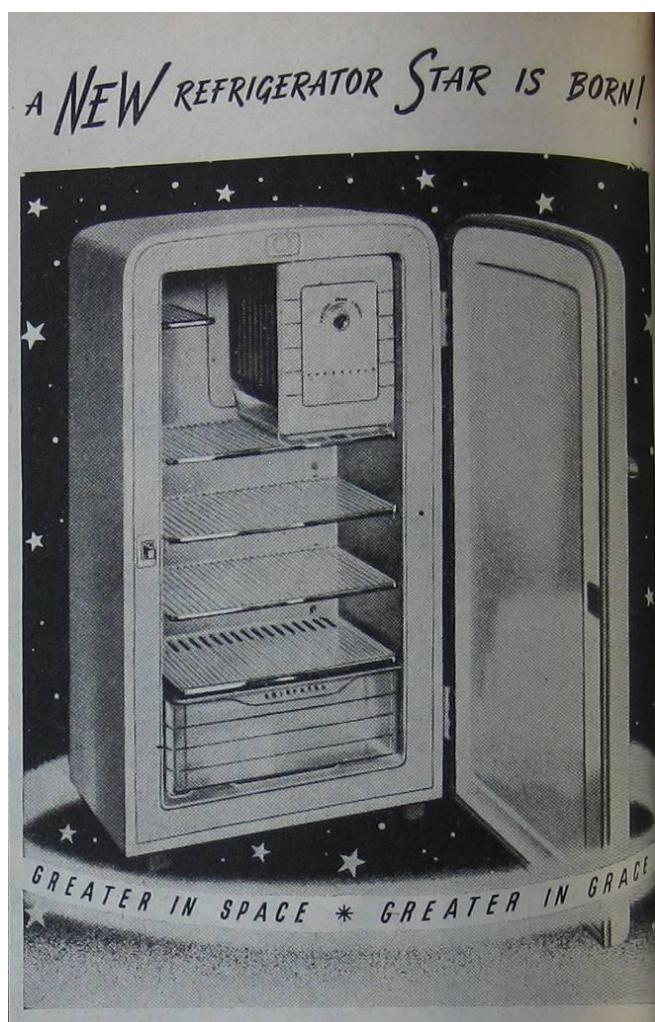


Image 4.11. Refrigerator advert, 1951⁴³⁴

⁴³⁴ Prestcold, (1951) 'Advert' In *Good Housekeeping* 60 (5): p106. It is also worth noting the space age imagery that has been employed in this advert to depict the modern and futuristic nature of refrigeration technology.

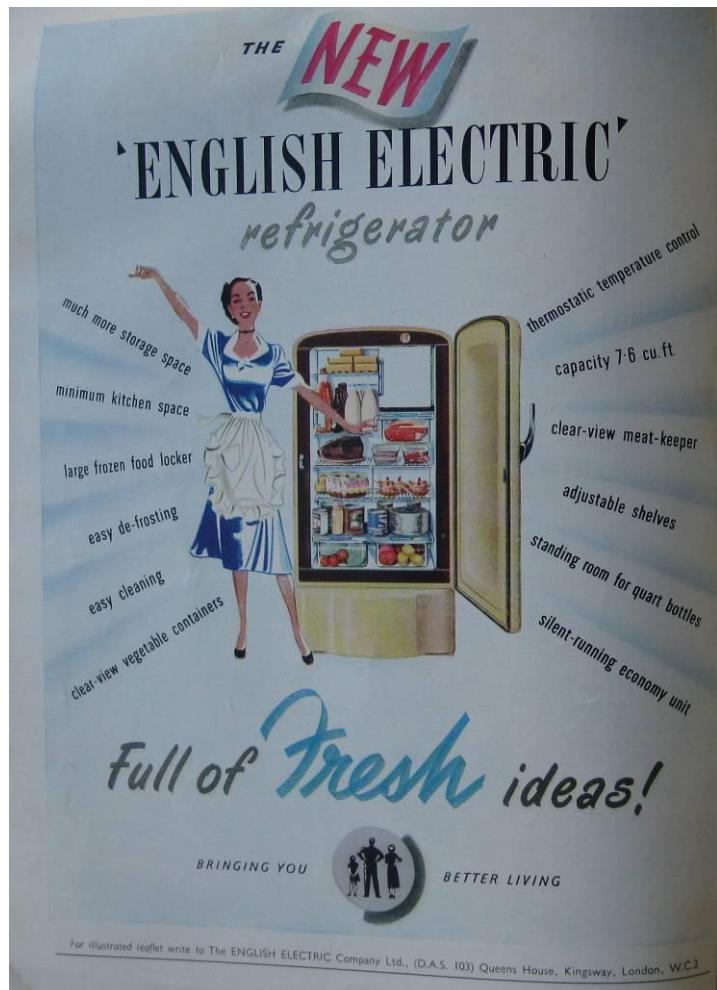


Image 4.12. English Electric Refrigerator Advert, 1952⁴³⁵

The use of space inside the fridge was prescribed by the industry through the medium of consumer advice in specialist journals such as the *Electrical Age* and popular magazines such as *Good Housekeeping*. For instance, a 1942 article in the *Electrical Age* offered the following advice:

By correct placing of food in the refrigerator it is possible to keep it fresh for several days without the contamination of flavours caused by the contact of various foodstuffs...Fish should be placed on the tray provided under the icebox.⁴³⁶

The intention of *The Electrical Age* was to promote electricity through the education of women and encompassed the correct use of appliances to maintain efficiency. Guidelines provided by

⁴³⁵ The English Electric Company, (1952) In *Good Housekeeping* 61(4): Frontispiece.

⁴³⁶ Anon., (1942) 'The Kitchen Plays Its Part' In *The Electrical Age* 3(25):p850.

the EDA in a 1952 handbook for the maintenance of domestic electrical refrigerators defined the ‘safety zone’ of temperatures at which food should be kept to prevent decomposition and the development and spread of bacteria:

Numerous experiments have shown that the bacteria and moulds that spoil food develop very slowly at temperatures below 50°F. but multiply very rapidly at higher temperatures. Temperatures below 40°F. are, in general, unnecessary as they not only lead to excessive running costs but make such items as butter and margarine too hard for convenience. The zone between 50°F. and 40°F. has been termed the “safety zone” and under normal operation the temperature of a domestic refrigerator should be kept within these limits.⁴³⁷

The ability of air to circulate around the fridge was essential and a consideration of this was important when stocking the fridge. The handbook further recommends that an explanation of air circulation and the coldest part of the cabinet be provided by the installation engineer for the user’s benefit and to ensure user satisfaction.⁴³⁸ This was important for the use of the internal space in refrigerator cabinets to maximise the preservation of food quality. The scientific management of space within the fridge to optimise food preservation reflected the scientific management of the ideal kitchen introduced above. We do not yet have an accurate picture of the degree to which people adopted such advice within their own homes but one might assume that many a busy housewife placed food within whatever space was available at a specific moment in time inside their refrigerator. Of course we cannot also rule out the influence of the tacit domestic knowledge of the housewife that would have guided the use of refrigerators as a storage space. In the next section I will look at how the refrigerator was designed and understood as part of a system of storage within the ideal modern kitchen.

Refrigeration as part of a system of storage space

Electric refrigerators as appliances designed specifically for the storage of perishable foodstuffs, became part of a system of storage within the kitchen. Domestic refrigeration removed a need for a separate larder or pantry as the storage and preservation of food was a function that could now be incorporated into the kitchen. However, it is not necessarily true that this was the case across all households. It was possible for refrigerators to be placed in

⁴³⁷ EDA, (1952): p144.

⁴³⁸ EDA, (1952): p41.

larders, sculleries and alternative spaces to the kitchen. In addition, the allocation of which foods should be stored in the refrigerator inherently determined the sorts of things that would not be stored in this space, for instance dry goods. Alternative storage in the kitchen was thus required, forming a system of storage.

The emergence of electric refrigerators on the domestic consumer market occurred against a move towards the built in appliances and deep cupboards of the ideal rationalised kitchen of the middle classes as imagined by modern architects and designers. Electric refrigerators were tall, unwieldy and noisy machines that broke up the smooth, clean flow of the ideal kitchen space. In the 1930s refrigerators were streamlined in order to be commensurable with the ideal of the modern and efficient kitchen that had emerged. The design of storage units that was proposed in the 1944 government report on municipal housing introduced at the beginning of this chapter is pictured in Image 4.13. They appear to conform to the aesthetic of the fitted cupboards pictured in contemporary advertising.

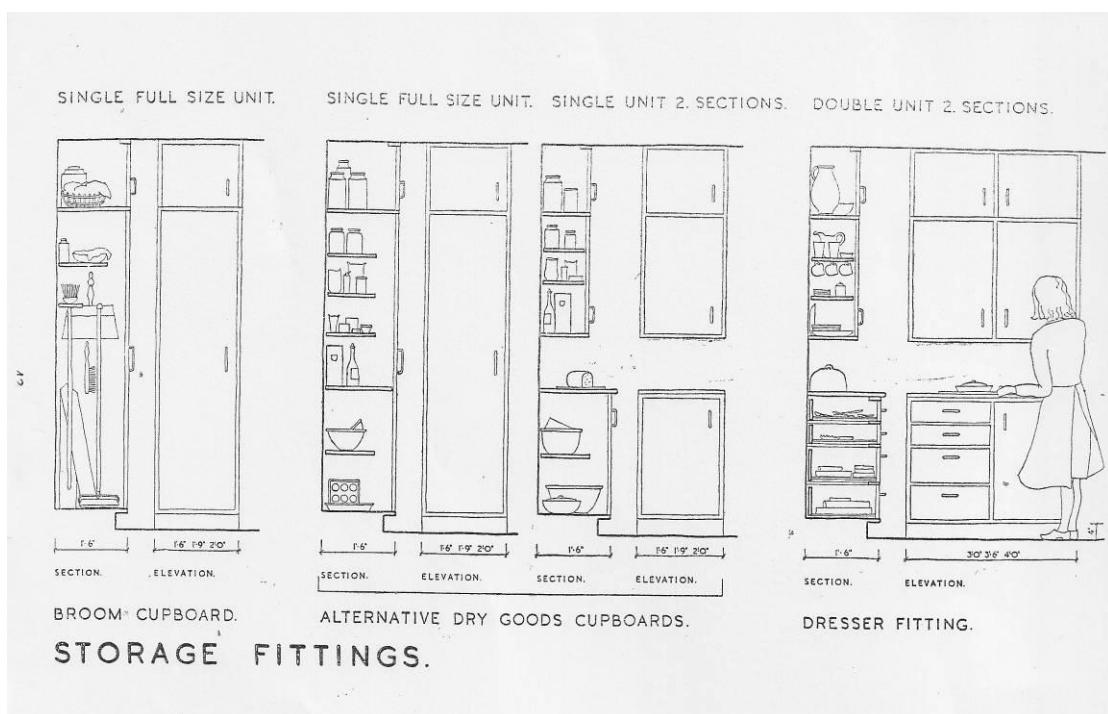


Image 4.13. Storage unit designs for municipal housing, 1944.⁴³⁹

⁴³⁹ HMSO, (1944) *Design of Dwellings. Report of the design of dwellings sub-committee of the central housing advisory committee appointed by the Minister of Health and Report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing*: p42.



Image 4.14. 1940s Kitchen from housewares catalogue⁴⁴⁰

In evidence of this similarity, Image 4.14. from a contemporary house wares catalogue pictures plastic laminated fitted cupboards within a kitchen. The 1944 report on municipal housing also considered the possibility of providing refrigerators for the kitchens. The conclusion of the report stated that, ‘We hope that methods of mass production may in time bring refrigerators within the reach of the great bulk of the population, but we do not consider it at present practicable to provide them in municipal dwellings.’⁴⁴¹ This conclusion reveals discrepancies in the public health aims of the government in promoting personal and food hygiene across the whole of the population. The purpose of the report was to improve the quality of the standard of municipal housing, and health through improved living conditions, but did not at this time extend to include the provision of refrigerators. The quote does however show that refrigerators were still unaffordable for the majority, a fact that will be further supported by the statistics discussed later in this chapter.

The location of refrigerators in the kitchen was contingent upon the availability and accessibility of an electricity supply. As we have seen in Chapter 2, Melanie Unwin’s work showed how the supply of electricity to appliances is too often neglected but had an important

⁴⁴⁰ Science and Society Picture Library, Science Museum, Image No. 10256580, (n.d.)

⁴⁴¹ HMSO, (1944) *Design of Dwellings. Report of the design of dwellings sub-committee of the central housing advisory committee appointed by the Minister of Health and report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing:* p30.

impact on their design location and use. In relation to refrigerators access to a plug socket would determine where in the kitchen they could be used, having consequences for kitchen planning. Without appropriately located outlets in the kitchen, housewives would not be able to organise their appliances relative to each other in such a way to maximise efficiency, as proposed by time and motion studies and the concept of the work triangle outlined earlier. This is just one example of how the location and use of refrigerators and the successful implementation of scientific management was contingent upon existing spaces in the home that would have varied greatly in size and shape.

In a 1938 article from the *Electrical Age* on 'More leisure for the housewife' the benefits of storing food in a refrigerator were explained, 'The electric refrigerator will enable you to store food and, by buying larger quantities and cooking in advance, you will economise both in money and your own precious time.'⁴⁴² The advice recognises and is re-constructing shopping practices linked to the use of refrigeration. It suggests changes in the practice of shopping daily and receiving daily deliveries to the home. Whilst refrigerators preserved fresh food for longer it is impossible to attribute the refrigerator as the cause of changing shopping patterns or to state that changing shopping patterns promoted the adoption of refrigerators but that the two were interlinked and occurred contemporaneously. It was also at this time that canned and frozen foods became more readily available. The quote also provides an example of how the electrical industry went to some lengths to describe refrigerators as being labour- or time-saving, an alleged feature of electrical appliances that appears as a continuous theme in advertising.⁴⁴³ It was a continuous and automatic form of technology that would require no further input from the housewife in order to run. This is misleading because whilst it did not demand the housewife's attention in order to run, it was important to maintain the cleanliness of refrigerators in order to preserve their hygienic function, a role that fell to the responsibility of the housewife. Advice in an article on 'Keeping Cool' In a 1940 edition of the *Electrical Age* recommended that, 'Allow your refrigerator to work efficiently by keeping it spotless inside (all spillage should be wiped immediately) and seeing that shelves have special attention.'⁴⁴⁴ It is yet another example of the housewife's responsibility for the health and welfare of the family through the maintenance of cleanliness and hygiene in the home.

⁴⁴² Anon., (1939) 'More Leisure for the Housewife' In *The Electrical Age* 3(14): p553.

⁴⁴³ The myth of time and labour saving devices has been addressed in the work of Ruth Schwartz Cowan and is something that I will return to in later chapters in greater detail.

⁴⁴⁴ Anon., (1940) 'Keeping Cool' In *The Electrical Age* 3(19): p700.

4.3. Refrigerators: The Lived Reality

In the introduction I raised the question of who was participating in the modern democracy envisaged by Waugh and his contemporaries, and the suggestion that there was a move towards mass consumption and greater social fluidity. One element of modernity that I have focused on in this chapter is hygiene and thus I would like to address the question more specifically of who was participating in the notion of hygienic modernity that emerged within the remit of public health that was adopted by the electrical industry to promote the consumption of refrigerators.

It is clear from the claims of promoters of the electrical industry and statistics alike that there was still a large class difference in consumption patterns. Domestic refrigerators were initially consumed by the wealthier members of British society. Refrigerators began to appear in a small number of British homes in 1924 but high prices meant that they could only be installed within wealthy households. In 1937, an article in the *Electrical Age* made the claim that in wealthy households ‘...they were luxury pieces and their vital usefulness in preserving food was not of great importance.’⁴⁴⁵ Refrigerators were appliances that were continually on display in the kitchen and thus a visible show of modernity to any visitors.

At the same time as this article in the *Electrical Age* was claiming that wealthy households were the only homes that installed electric refrigerators, the EDA issued an advert (See Image4.15.) that appeared in the same journal and claimed ‘1000 more homes invest in ELECTRIC Refrigerators EVERY WEEK!’ Whilst this statement may be based in some factual evidence the use of such a claim as a marketing tool was designed to increase the appeal of the electric refrigerator by encouraging consumers to feel that they should also purchase an electric refrigerator if so many other people were. P.L. Garbutt, of the Good Housekeeping Institute and with a similar interest in promoting the use of the refrigerator made the claim two years later that, ‘A refrigerator can be taken for granted in the well-equipped kitchen for today.’⁴⁴⁶ The rate of uptake suggested in the former advert and P.L. Garbutt’s latter statement about the proliferation of electric refrigerators are belied by independent statistics.

⁴⁴⁵ Watson, S.M., (1937) ‘50°F and Under’ In *The Electrical Age* 3(7): p263.

⁴⁴⁶ Garbutt, P. L., (1939) ‘Good Housekeeping Institute’ in *Good Housekeeping* July 35(5): p59.

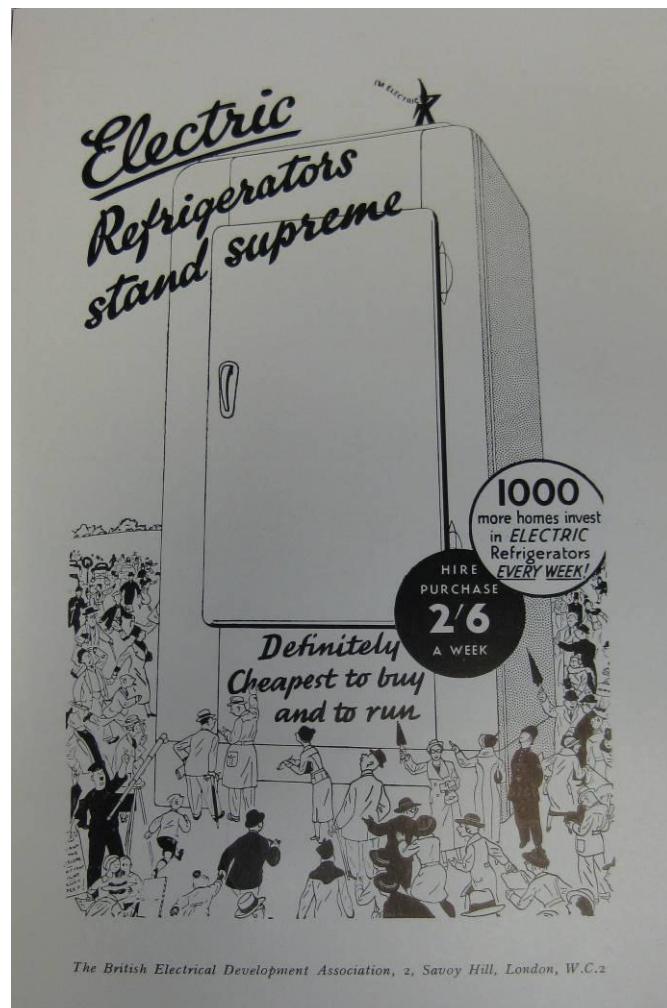


Image 4.15. EDA advert for refrigerators, 1937⁴⁴⁷

In 1948 in upper and middle class households, approximately 17% owned a refrigerator in comparison to just 3% of the lower middle class.⁴⁴⁸ In a survey of British life from 1950, Geoffrey Browne stated that refrigerators remained uncommon in households and that this might be explained by the temperate climate obviating the need for an appliance to keep food cold.⁴⁴⁹ This explanation for a low distribution neglects other reasons why refrigerators remained uncommon. For instance there is no consideration of the impact of cost and affordability, or the availability of suitable spaces in which to place this large consumer item. The number of refrigerators in homes increased during the 1950s such that by the 1960s these figures had reached approximately 65% of the upper and upper-middle class homes and

⁴⁴⁷ EDA, (1937) 'Electric Refrigerators Stand Supreme' In *The Electrical Age* 3(6): Backpage.

⁴⁴⁸ Table 1. In Corley, T.A.B., (1966): p16. These statistics are compiled as estimates from a number of contemporary consumer research publications. These include *The Market for Domestic Appliances* (1945); *Patterns of British Life* (1950); Women and the National Market for Domestic Electrical Appliances (1964).

⁴⁴⁹ Browne, G., (1950): p29. The purpose of this statistical study was as a sociological record of everyday British Life in 1950.

38% of lower middle class homes. Refrigerators had also started to appear in working class homes. It has been estimated, in Corley's study, that 15% of working class households had a refrigerator in 1963.⁴⁵⁰ In comparison to other large electrical consumer items available for domestic use, such as the cooker discussed above or the washing machine in Chapter 2, the refrigerator appears to be the most widespread in use.

The variety of contemporary claims about the number of refrigerators within British homes makes it difficult to appreciate the true extent of their use. Even the official statistics from HMSO provide only guidelines, since they do not incorporate second hand appliances. They do however tend to support significant class differences in ownership and suggest that it was the upper and upper-middle classes that were participating most commonly in a notion of hygienic modernity through possession of electric refrigerators prior to 1960.

In those homes where people did own a refrigerator what can we ascertain about their choices for the purchase of this large consumer item? Mrs Veneer, born in Winchester in 1916 and working as a servant prior to her marriage in 1938 to a bricklayer, owned her first refrigerator in 1955. Mrs Veneer's motivations for desiring a refrigerator over other consumer items are unclear but they were able to afford it because they were owed some money, 'that was because a builder owed my husband some money (laughs) and he had the alternative to pay or he wouldn't do any more work for him.'⁴⁵¹ Norman Townson, a mechanical engineer and son of a lorry driver/salesman bought a refrigerator for his parents in the 1960s. He believed that for the majority of people in the working classes in the 1950s, refrigerators were just beyond their means and that convenience was the driving factor in promoting purchases during the 1960s.⁴⁵² A similar story was told by another oral history participant who was the son of an income tax inspector and in contrast to Norman Townson was born into a family that was able to afford daily help. He bought a refrigerator for his parents in 1950/51 using a staff discount when he was working as a student apprentice at Metropolitan Vickers.⁴⁵³ In this instance the opportunity to buy a refrigerator at a reduced price appears to have been the motivation for purchasing one.

Not everyone bought their refrigerators and other large electrical items as new. Second hand appliances were also in circulation and are generally absent from the statistics reported by the industry and governmental consumer studies. Another individual from a working class background living in Cheadle from the 1950s, had been an office worker prior to

⁴⁵⁰ Table 1. In Corley, T.A.B., (1966): p16.

⁴⁵¹ Veneer, Oral History Interview, July 2010.

⁴⁵² Townson, N., Oral History Interview, August 2010.

⁴⁵³ Balmer, P., Oral History Interview, September 2010.

her marriage, and bought her first refrigerator second hand in the 1960s. She described it as ‘one of those big sort of American Style’.⁴⁵⁴ There is a sense from these accounts that many people bought large consumer items such as the refrigerator on an opportunistic basis rather than seeing it as a necessity that they needed to save for.

Refrigerators lived up to the ideal expectations generated by the promises of advertising to varying degrees. In 1960 the EAW conducted a survey of women’s viewpoints on electrical appliances. By its very nature, as a collection of the opinions of EAW upper and upper-middle class members across the country, the survey is limited in what it can tell us about users from other social classes. It does however reveal a general satisfaction with refrigerators among the women involved. Suggestions for the improvement of electric refrigerators included, making them wider and less deep, the inclusion of an interior light (although this was already available in some models), less noise and automatic defrosting.⁴⁵⁵

4.4. Conclusion

The ideal of the modern, rationalised and efficient kitchen that was scientifically managed through the accommodation and use of streamlined electrical appliances that emerged in the 1930s is a crude generalisation. Kitchens were individual and transitional spaces that would have often incorporated a mix of old and new as electrical appliances were consumed. Actual kitchens also exhibited a wide variety of different designs, incorporated different appliances, and were built into a variety of different spaces ranging from pre-existing to purpose built. Thus, in most cases they differed from the constructed ideal represented in contemporary advertising. Electric cookers were an electrification of an existing technology that was introduced to this space and competed heavily with gas cookers. In contrast refrigerators offered a technology that was designed to be installed and used in the same space but which out-competed gas during its early development in America. Drawing on similar issues of child welfare, women’s responsibilities for family health, and the preservation of food stuffs, advertising for refrigerators reflected the rise in personal hygiene demonstrated within public health policies. Hygienic modernity also extended beyond the refrigerator to the kitchen space itself as illustrated in the description of the idealised, rationalised, and efficient kitchen. Both technologies were streamlined in the 1930s to fit with the ideal of the

⁴⁵⁴ Darnley, S., Oral History Interview, January 2011.

⁴⁵⁵ MOSI Archives, ESI 1/7/7, EAW, (1960) *Electrical Viewpoint: A survey of the user's opinion on electrical equipment in the home: conducted by The Electrical Association for Women*: p27.

rationalised modern kitchen but electric cookers remained in heavy competition with gas competitors, whilst the refrigerator was not widely used by the masses prior to the 1960s due to its wieldy and costly nature. In the next chapter I want to explore the gender differences in roles within the home in more detail by looking at leisure in the home.

Chapter 5

Leisure



Image 5.1. Electric Build-it Set c.1956-1960.⁴⁵⁶

Gender differences in the participation of individuals in household tasks were reinforced through leisure and electrical toys in the home. For example electric toy sewing machines for young girls conformed to the stereotype of female roles in making and mending clothes to care for the family. In contrast electrical toys such as construction kits promoted technical hobbies amongst young boys. Image 5.1. depicts one such construction set from the late 1950s, the Electric Build-It Set. The set contains instructions for making several working battery operated toys that included a traffic light and bike horn among others. It is American in origin but representative of similar kits that were available on the British consumer market, as

⁴⁵⁶ Science and Society Picture Library. Science Museum London, Object No. 1998-0690, (c.1956-1960) *Electric Build-It Set*. Model E-1 Set produced by Electric Games Company, Massachusetts, USA.

evidenced in a Marks and Spencers advert for construction kits, in Image 5.3. On the box of the Electric Build-It Set, there is an image of a boy using a table or desk space. Such a space was not necessarily a dedicated space for his specific use but could be one that was temporarily accommodated for the purposes of play. It is the consumption of electrical toys and electric radios that will form the focus of this chapter to look at how domestic spaces were accommodated for the use of electrical appliances associated with leisure as opposed to housework during the 1930s and 1940s. I will also consider gender and intergenerational differences in the participation of individuals within home-based leisure using the case studies of electric toys and radios.

It has been shown by economic historians Sue Bowden and Avner Offer that electrical consumer goods associated with leisure were consumed more rapidly than white goods in Britain and the United States. For example they claim that radios were present in 75% of households within 20 years of first becoming available as a consumer product, whilst electric irons took 30 years to reach a similar level of saturation.⁴⁵⁷ They based their approach around the concept of time, differentiating between time-saving goods related to housework and time-using goods that relate to the use of discretionary time within the home. Using economic principles and models of the diffusion of different appliances they show how time-using durables diffuse faster than time-saving products because consumers place a greater value on increasing the quality rather than quantity of their leisure time.⁴⁵⁸ Ben Fine wrote a response critiquing the ahistorical and asocial approach of using the concept of time to explain outcomes that were historically specific. Distinctions between time-using and time-saving are not appropriate in the historical context of the household ‘where a discipline of time is neither reinforced nor liable to be adopted.’⁴⁵⁹ Bowden and Offer’s treatment of demand is also too simplistic, because it is complicated by affordability, access, individual choices, and historical/social context. Whilst these studies reveal a general trend over time they neglect individual differences in consumption. The consumption of electrical toys and electric radios would have shown considerable variation between different users within the household, particularly between different generations and genders. This chapter will look at electrical toys and then focus on a case study of the radio in order to capture intergenerational and gender differences in the use of the home for leisure. These new technologies would also have been accommodated in the home in different ways during the 1930s and 1940s, and it is how they were accommodated that I will explore further throughout this chapter.

⁴⁵⁷ Bowden, S. & Offer, A., (1994): p729.

⁴⁵⁸ Bowden, S. & Offer, A., (1994): pp725-748.

⁴⁵⁹ Fine, B., (1999): p553.

Firstly, changes in meanings of domesticity were related to the increasing pursuit of home-based leisure activities during the first half of the twentieth century. In the first section of this chapter I want to establish this trend and consider gender differences in understandings of, and participation in, domesticity. Greater male participation in the home led to the creation of specifically male spaces in the home, such as the garden shed, garage or attic. Secondly, I will consider the consumption of electrically powered toys and the accommodation of domestic spaces for their use. The British toy industry was only just beginning to make headway against the predominance of German manufacturers at the beginning of the twentieth century. This was greatly facilitated by the First World War, the aftermath of which saw a decline in the consumption of imported German products.⁴⁶⁰ As more homes were wired for electricity in the inter-war period, electric train sets were increasingly popular.⁴⁶¹ Electrical kits and trains sets were consumed within a wider context of the rising popularity of construction kits and hobbies.

From electrical construction kits, I will thirdly consider male hobbyists and the rising popularity of the radio, commenting briefly on its use in ‘male’ spaces within the home. The building and maintenance of radios was a male leisure activity that displayed technical knowledge. The origins of the radio pre-date the construction of the national grid. The concept of radio transmission in Britain is credited to Guglielmo Marconi (1874-1937). He first demonstrated its potential as a source of entertainment in 1920 when he invited the famous singer, Dame Nellie Melba (1861-1931), to perform opera. The first British transmissions and the creation of the British Broadcasting Corporation (BBC) followed shortly after in 1922.⁴⁶² By 1930, 3.4 million licenses had been purchased across Britain and by 1960 BBC VHF⁴⁶³ transmissions covered 97% of the population in Britain.⁴⁶⁴ It was in the late 1920s and 1930s that attempts were made to design the radio such that it would not look out of place in the home, and the 1930s that radio as a focus of family centred leisure was represented as a modern ideal of domesticity. As such it is this period that I will be focusing on in this chapter. Fourthly, I will consider family relationships, domestic space and the use of radios. I will discuss where they were used, changing listening practices and the choice of programme. Finally, I will specifically consider female listeners of the radio as distinct from male hobbyists, focusing on the use of the radio as an accompaniment to housework.

⁴⁶⁰ Fraser, A., (1966): p209.

⁴⁶¹ Brown, K.D., (1996): p132.

⁴⁶² The BBC was formed of six major radio manufacturers and a number of smaller companies in a limited company monopoly that was financed by a Post Office licence fee of 10 shillings.

⁴⁶³ Very High Frequency.

⁴⁶⁴ Geddes, K. & Bussey, G., (1991).

5.1. Gender Differences in Participation in Modern Domesticity

Having introduced both electrical toys and the radio which will form the main body of this chapter, I will use the first section of this chapter to discuss the historiography surrounding domesticity and leisure to enable an enhanced understanding of the domestic context in which they were consumed. I will focus on gender differences in the meanings of domesticity and the idea that leisure became increasingly home-based during the early twentieth century.

Domesticity is most usefully and broadly defined as being domestic in character and that is relating to home, house or household and family life.⁴⁶⁵ The term domesticity can also and more specifically pertain to oneself and one's own position within the environment of the home. Its use thus becomes more complex since the term domesticity can be applied to understandings of the home on a number of different levels. Not only does it refer to the nature of the home itself, but also incorporates the relationship between the individual and their home environment. It is also a concept that changes continually as house design and its contents change and as understandings and the values placed on the home alter. There are a large number of studies that use the notion of domesticity but rarely do they define what domesticity means within the context in which it is being applied. However, Claire Langhamer's study on *The Meanings of Home in Postwar Britain* suggests domesticity incorporated a 'comfortable, consumer-bound and increasingly privatized domestic lifestyle', which emerged after the Second World War.⁴⁶⁶ Meanings of domesticity were altered by the changing use of the home as it was increasingly a centre of consumption as opposed to production. According to Claire Langhamer it was a place linked by respondents of the Mass Observation Survey to physical comfort, specifically to 'relaxation, freedom, peace and privacy'.⁴⁶⁷ It was also a space in which individual identities and relationships were formed and transformed.⁴⁶⁸ Understandings of domesticity were linked to the home as a private and personal space but it increasingly came under the influence of the public sphere. The design of municipal housing, the promotion of the importance of family and the responsibility of housewives for health and welfare of the family within the home environment are instances of outside influences on the domestic sphere.⁴⁶⁹ Gender differences in participation within domesticity are most notable in the different domestic roles of individuals in the home. For women the home was a place of

⁴⁶⁵ 'domesticity, n.' (1897) *Oxford English Dictionary Online*.
[<http://www.oed.com/view/Entry/56673>, accessed June 2011].

⁴⁶⁶ Langhamer, C., (2005): p341.

⁴⁶⁷ Langhamer, C., (2005): p344.

⁴⁶⁸ Floyd, J., (2004): p61.

⁴⁶⁹ See Chapter 1 for discussion of public and private spaces, Chapter 2 for background on municipal housing and Chapter 3 and 4 for public campaigns for hygiene and cleanliness in the home.

work as well as of leisure. Whilst many of the electrical appliances discussed in the previous chapters are promoted as time and labour saving, making more time for leisure, little attention is paid to how this leisure time might be spent, and the role electrical appliances and entertainments played in this.

Langhamer sees the necessity of making the home a comfortable space for other family members to enjoy themselves, as an important aspect of female domestic work.⁴⁷⁰ Selina Todd's work on young women, work and leisure in the 1920s and 1930s highlights how the changing roles of women, as they took on waged work outside the home and became increasingly socially and financially independent, enabled them to become increasingly prominent consumers of leisure products and activities.⁴⁷¹ These included dance halls, cinema and magazines and varied greatly as a consequence of region, gender, life cycle and class. The ability for young women to spend their wages on leisure activities was balanced by the economic need of the family and tempered by the availability of time to devote to a leisure activity.⁴⁷² As such adult women lacked the disposable income and time to enjoy leisure activities whilst younger women consumed 'new commodities and commercial leisure outlets'.⁴⁷³ Todd does, however, focus on leisure activities outside of the home. Elizabeth Roberts' study on working class women also reflects on leisure outside of the home and particularly the popularity of dance halls in the 1920s and 1930s. She comments on the social and religious differences in attendance, and control exerted by different church denominations with varying views about the morality of dances.⁴⁷⁴ It becomes clear that the literature on working women's leisure in the early twentieth century only relates to young girls and women. Older women's time was presumably preoccupied with housework.

In contrast to the leisure pursuits of women, men were portrayed as pursuing older leisure activities such as smoking, drinking and gambling.⁴⁷⁵ Sociologists, Willmott and Young conducted a study into the family relationships and kinship networks of east Londoners in the 1950s.⁴⁷⁶ They looked in-depth at the relationship between husbands and wives at this time, particularly within the domestic environment. Their study recorded changes in the use of leisure time by males and a shift towards increased time in the home. Portrayals of the working class male refuge of the pub, a masculine living space and retreat, were recorded by social investigations prior to the Second World War. However, one woman interviewed by

⁴⁷⁰ Langhamer, C., (2005): p353.

⁴⁷¹ Todd, S., (2005): p789.

⁴⁷² Todd, S., (2005): p793.

⁴⁷³ Todd, S., (2005): p804.

⁴⁷⁴ Roberts, E., (1984).

⁴⁷⁵ Todd, S., (2005): p804.

⁴⁷⁶ Young, M & Willmott, P., (1957).

Willmott and Young described how, 'If they want a drink of beer now, they go and fetch a bottle in, so they can watch the tellie at the same time.'⁴⁷⁷ This changing behaviour among some individuals can be attributed to a number of causes. Firstly the statement specifically applies to a small sample group of individuals who had been relocated from Bethnal Green to a newly built housing estate where there were fewer pubs. Secondly, after 1945 the five day working week became more common providing working class men with a weekend and thus a greater amount of leisure time to dispose of.⁴⁷⁸ Thirdly, the rise in electrical entertainments and hobbies in the home made home-based leisure time a more attractive prospect. And finally, new council homes with provision for a garden and shed/garage provided new spaces that could be appropriated as specifically masculine in nature. A number of studies argue in favour of increased male participation in domesticity throughout the 1930s and 1940s. Neil Penlington looks at how unemployment affected male participation in the home and how loss of economic power led to renewed power negotiations between husbands and their wives. Penlington argues that men continued to spend a large amount of time outside of the home but participated in domestic chores to a varying degree and that 'those men who took on domestic labour often did so in such a way that left power relations between husband and wife unchanged.'⁴⁷⁹ For example Mr Jones' personal testimony revealed that he scrubbed the step and cleaned the windows. DIY offered an alternative means for men to participate in the home in a gender specific way. According to historian Thomas Foster DIY was:

Ambiguously positioned between work and leisure, it was associated with a cult of suburban family life that presented the home not just as an essentially feminine space, but also a space protected from the alienating drudgery of corporate life, where men could engage in their construction of domesticity through suitably gendered practices.⁴⁸⁰

Willmott and Young, listed the domestic roles of men as including cleaning windows, mending fuses and decorating. Among their observations Willmott and Young recorded the thoughts of one woman about men's changing roles in the home alongside the broader social trend of greater numbers of married women pursuing paid work outside the home. Their anonymous respondent stated that:

⁴⁷⁷ Young, M & Willmott, P., (1957): pp23-24.

⁴⁷⁸ Young, M & Willmott, P., (1957): p24.

⁴⁷⁹ Penlington, N., (2010): p284. Mr Jones, was an oral History participant of Penlington's Study, who was unemployed in the 1930s.

⁴⁸⁰ Foster, T., (2002): p263.

Many husbands acknowledge that when their wives also go out to work, they have a responsibility to do more to help in the home. ‘If the wife goes out to work,’ as one woman put it, ‘then the husband’s entitled to help’; and he usually does.⁴⁸¹

They concluded however, that ‘There are still plenty of men who will not do ‘women’s work’ and women who think ‘it’s not a man’s place to do it’. But for most people it seems, the division is no longer rigid.’⁴⁸² The greatest difference in male participation recorded by Willmott and Young and noted in Penlington’s article is in the greater sharing of responsibility for child care. These studies reveal that men were taking on more role’s within the home but that they did so in such a way that it did not impact on their masculinity.

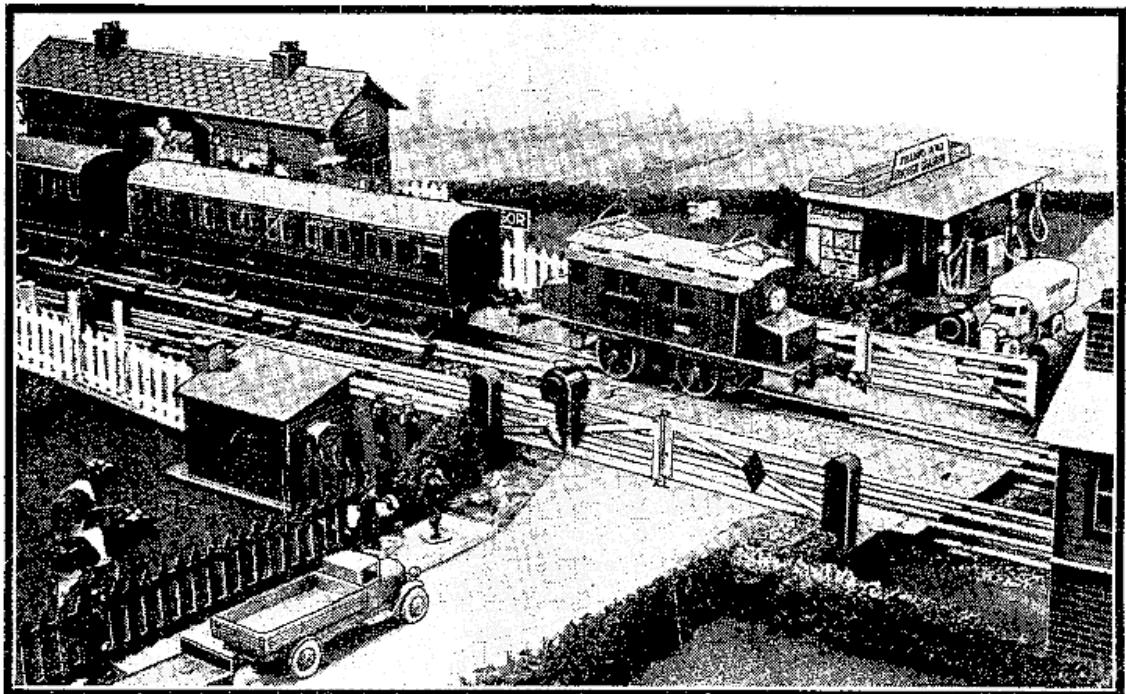
Gender differences in individual participation in and understandings of domesticity and home-based leisure have implications for how electrical toys and radios were accommodated into different spaces within the home. The ways in which spaces in the home were accommodated for leisure activities by different individuals will be a unifying theme throughout the remainder of this chapter.

5.2. Electrical Toys

The use of electrically powered toys in the home required the ability to accommodate and adapt an existing space in the home to provide a space that was electrical in nature, that is supplied with electrical power, and/or free for leisure. I would like to begin this section by illustrating this re-appropriation of space with the example of the electric train set. I will then discuss the historiography of construction kits, the electrification of toys and the implications for the domestic spaces in which children played. I will conclude the section by considering issues of safety on the consumption of electrical toys.

⁴⁸¹ Young, M & Willmott, P., (1957): p21.

⁴⁸² Young, M & Willmott, P., (1957): p27.



A suburban train hauled by a Hornby LE120 Locomotive leaving a station. The use of the various Dinky Toys components adds considerably to the realism of the illustration.

Image 5.2. Hornby Electric Train set.⁴⁸³

The image above depicts part of a Hornby Electric Train Set as advertised in *Meccano Magazine* in January 1936. It is apparent that it is an image that has been heavily doctored in order to assist the imagination. The electrical nature of the train set is unclear and the layout incorporates a number of additional toys by the same manufacturer, promoting their use alongside the train itself. Furthermore it is unclear from this depiction what the space requirements were in order to set it up. This suggests that the exact set up is open to adaptation based on the individual's ability to afford parts, the availability of space and individual choice. For instance it could form part of a small circuit set up on the bedroom floor, landing or even table top; or it could be part of a more elaborate system of tracks established in the possibly larger space of an attic or living room; it might be a permanent fixture in this space or a temporary construction; it might constitute an obstacle to free movement around the space in which it is used or be neatly positioned to one side; the variations are boundless. Aitken and Herman analysed spaces of play as 'spaces where children learn about themselves and their relationships to others. As such, these are 'transitional' spaces' where identities are being formulated and reformulated, and where selves are open to engagement with the environment, instead of controlling it.'⁴⁸⁴ Within this interpretation of spaces of play, children

⁴⁸³ 'Electric Railway Operation', January 1936, In Levy, A., ed. (1991): p54.

⁴⁸⁴ Quoted in Domosh, M., (1998): p279; Original article is Aitken, S. C. & Herman, T., (1997).

both accommodated spaces of play for their purposes and were influenced by the space in which play was occurring. As well as occupying a specific space the train set also interacts with the domestic space whilst in use through the noises that are generated. The sound of the electric motor and the accompanying shouts and scuffles of children playing indicate that the surrounding area is now a space of play.

Yet, at the same time the presence and use of an electric train set, in any domestic space, at the time that the Hornby Train Set was advertised in 1936, was dictated by the availability and accessibility of a power socket, an amenity that very few homes had direct access to. In the home of Mrs Veneer and her family in the late 1940s the absence of electricity was not seen as a hindrance to a relative when buying an electric train set as a gift. In the following quote Mrs Veneer, talks about the installation of electricity in her rented home, which she described as three small rooms.

Well I didn't have the use of electricity until I got married in ... No after Michael was born ... 1948, I first used electricity in the, house we were living in... in Winchester at that time. And then that was installed, because an Auntie bought my son an electric train set. I told her he couldn't have one because we had no electricity, but she bought it, so we had to have the electricity installed.⁴⁸⁵

In this case the inability for their son to play with his new train set motivated the installation of electricity but the motivations as to why his Auntie insisted on gifting an electric train set when they didn't have electric power is less apparent. Was it an attempt to prompt the adoption of electricity by Mrs Veneer and her husband? Or was it linked to the social cachet of the electric train set as a gift and consumer practices? Either way this anecdote emphasises the importance of an available electricity supply to the use of the electric train set in the home.

In the decade or so prior to the introduction of the electric train set there were a number of other electrically powered toys on the domestic market. Their consumption was not necessarily directly linked to an available power socket. The earliest electrical toys of the nineteenth century relied on static electricity.⁴⁸⁶ Battery powered toys were more noticeably a feature of the post 1930 period and the increasing consumption of mass produced products. As with the plethora of clockwork and other mechanical toys that had preceded them, these electrically powered toys were highly portable and allowed children to play with them anywhere they wished (or possibly were permitted to). As the technologies behind electrical

Cloud bubble containing text:
Could compare photography to other chemical hobbies.

⁴⁸⁵ Veneer, Oral History Interview, July 2010.

⁴⁸⁶ Spilhaus, A. & Spilhaus, K., (1989): p65.

toys were developed and changed so the spaces, within which they could be used, altered in nature.

Electrical construction and model kits were also a popular childhood toy. Prior to the 1930s model making was limited to enthusiasts skilled in the use of wood or metal and the popularity of such a past-time is, according to historian Arthur Ward, illustrated by the large number of magazines for the amateur hobbyist. Mass production from 1930 onwards saw the expansion of educational construction toys based upon modular building systems.⁴⁸⁷ Antonia Fraser in her *History of Toys* viewed the popularity of constructional toys as linked with the introduction of Montessori teaching methods to Britain and the emphasis on educational toys that allowed children to develop their abilities and understanding through play.⁴⁸⁸ There were a number of electrical model kits available on the consumer market at approximately the same time as the Hornby Electric Train Set pictured above. Images 5.3. and 5.4. show adverts for electrical kits sold by Marks and Spencer in 1932:



Image 5.3. Marks and Spencers, 1932⁴⁸⁹



Image 5.4. TRIX Construction Kit, 1932.⁴⁹⁰

Image 5.4. of an advert for *Trix*, in particular recognises the user as a middle class boy, clean and well dressed, and representative of the middle class consumer base of Marks and Spencers in general. Historian Henry Schlesinger sees the popularity of construction kits,

⁴⁸⁷ Ward, A., (1999): pp12-13.

⁴⁸⁸ Fraser, A., (1966): p213.

⁴⁸⁹ Advert, (1932) 'A page of Wonderful Gifts' In *Marks & Spencer's Magazine*: p14.

⁴⁹⁰ Advert, (1932) 'Trix' In *Marks & Spencer Magazine*: p64.

specifically electrical and chemical sets, as part of the increasing popular celebration of the inventor, within which context, young boys began to imagine themselves as future successful inventors.⁴⁹¹ Electrical construction kits such as these could be used both in the same spaces as electric train sets but could also be extended to other spaces such as the bedroom desk, kitchen table or garden shed. Their use did not necessarily require access to a socket and its location whilst in use was thus more flexible. Electrical construction kits and electric train sets illustrate the difference between the ability to use pre-existing spaces and the need to create new specific electrical and temporary spaces.

Electrical construction kits formed one part of a wider culture of model making and kits that was present in the early twentieth century. Studies of the development of Meccano and Airfix provide useful parallels and comparisons that can be applied to the study of electrical construction kits. Frank Hornby came up with the founding concept of Meccano in 1901, whilst watching a crane at work. The simple construction and parts involved struck him as easily transferable to a constructional toy.⁴⁹² Further inspiration came from the interest his own children showed in experimental mechanical toys he made at home.⁴⁹³ He patented his idea, but had difficulty persuading manufacturers of the saleability of Meccano. The manufacture of 'Mechanics Made Easy' did however follow, later to become Meccano in 1907 and the largest toy making company in Britain.



Image 5.5. Instruction Booklet for Meccano.⁴⁹⁴

⁴⁹¹ Schlesinger, H., (2010): p202. See also Oldenziel, R. (1997).

⁴⁹² Fraser, A., (1966): p194.

⁴⁹³ Brittaine, J., (1987): p448.

⁴⁹⁴ Image from Ward, A., (1999): p10.

Image 5.5., of an instruction manual from a Meccano kit, shows a father and his children sprawled on the floor whilst engaged in the construction of a Meccano crane. It gives the impression that construction kits were just as demanding of space as the electric train set above but also shows that construction kits were presented as a leisure activity for father and son. In 1926 coloured Meccano in red and green was introduced and by 1930 the cost of a construction kit had risen from its original 7/6d. to £11.11s.0d.⁴⁹⁵

The sale of Meccano was also accompanied by the production and sale of Meccano Magazine. Regular competitions featured as a marketing ploy as well as articles on modern mechanical engineering and ideas for new mechanical models.⁴⁹⁶ It was not limited to mechanical engineering alone, including articles on electricity, radio and chemical experiments as well, thus it had an educational function as well as being a useful promotional publication. When Hornby Train sets were first electrified they featured heavily in the magazine showing the intensive promotion of a new product. One article described how 'Not only are existing clockwork lines undergoing conversion, but new systems, electrically-worked from the beginning, are clearly springing into existence.'⁴⁹⁷ In another article whose title, 'Commencing the Miniature Railway Hobby', was clearly aimed at launching the product and encouraging new consumers, the safe and correct use of electricity was described:

When using a Hornby Electric Railway it is important to see that the connections from the power supply to the track are correctly made according to the instructions packed in the sets. A fuse is included to prevent damage in the event of an accidental short circuit.⁴⁹⁸

As well as offering advice on electrical safety, which I will return to at the end of this section, this quote demonstrates the importance of an accessible power supply. It reinforces the idea presented earlier that availability of power limited the possible domestic spaces in which children could play with these toys, since they could only be used where there was access to a free socket. In chapter 2, it was shown that the provision of power outlets in homes was not always adequate for the use of appliances, let alone for toys.

⁴⁹⁵ Brittain, J., (1987): p449.

⁴⁹⁶ Levy, A. ed., (1991).

⁴⁹⁷ 'How to get more fun from Hornby trains: Electric Railway Operation' January 1936 In Levy, A., ed. (1991): p54.

⁴⁹⁸ 'Commencing the Miniature Railway Hobby' January 1936, In Levy, A., ed. (1991): p53.

Like the electric train set pictured in Image 5.2., the Dinky Toys, first introduced as accompaniments to Meccano, were often advertised using layouts in which they could be arranged and played with.⁴⁹⁹ A feature in January 1936 entitled ‘Fun with Meccano Dinky Toys: Making a Table-Top Layout’, describes how to make your own layout using paper, card and paint in order to arrange toys. For this purpose the article recommends a 3ft square space.⁵⁰⁰ Meccano was not exclusively aimed at producing boys’ toys. An advert in the July 1936 edition of Meccano magazine illustrated the range of Dinky doll’s house furniture for girls.⁵⁰¹

As with many commercial and mass produced domestic products during World War II, the depletion of resources and scarcity of materials impacted upon the toy industry, raising prices and limiting the introduction of new products. In the case of Meccano and Dinky toys, World War II also saw the re-appropriation of factories to die-castings essential for engines and other military machinery. In addition following the end of war, the government placed emphasis on production for export in order to address the national debt.⁵⁰² In the late 1940s, increasing competition with plastic model making kits led to a reduced interest in Meccano.⁵⁰³ The mid thirties had seen the introduction of the first plastic model kits – Frog ‘Penguins’. Airfix first appeared on the market in 1949 when the Ferguson Tractor was produced as part of a promotional campaign. In 1952 a model of Drake’s ship the Golden Hind was released as the first official Airfix model.⁵⁰⁴ In the 1950s Airfix, later to own Meccano Ltd, became a prominent competitor on the domestic toy market.⁵⁰⁵ However it was really in the 1960s that Airfix took off and began to dominate the market in construction kits.

Airfix was more affordable than Meccano had been, with the most expensive kits still only costing 17/6d. in 1964.⁵⁰⁶ However, not all families could afford even this and a large proportion of the population would not have had access to electrical toys as a consequence of inaffordability in addition to the limitations of power supply. For these children the creation of home-made electrical kits was a more feasible possibility. There are a couple of examples of books written in the 1930s specifically for the purpose of instructing in the manufacture of electrical toys at home as an educational tool. One example is Yates 1937 book on ‘How to Make Electrical Toys’. The introduction to the books describes the scope and purpose of the text:

⁴⁹⁹ Richardson, M. & S., (1981): p12.

⁵⁰⁰ ‘Fun with Meccano Dinky Toys: Making a Table-Top Layout’ January 1936 In Levy, A., ed. (1991): p42.

⁵⁰¹ Levy, A. ed., (1991).

⁵⁰² Richardson, M. & S., (1981): p17.

⁵⁰³ Brittain, J., (1987): p449. Parkinson, E., (1997): p32.

⁵⁰⁴ Ward, A., (1999); p6.

⁵⁰⁵ Richardson, M. & S., (1981): p17.

⁵⁰⁶ Ward, A., (1999): p6

It comes easily within the range of the average boy's mechanical ability and pocketbook to make himself a small electrical laboratory in which he may perform many wonderful experiments in electricity. A very modest tool chest will serve, and little time will be required for the construction of the various instruments.

It is one thing to read about electricity in books and quite another thing to actually play with it and discover for one's self what it will do, how it will act, and how to put it through a number of tricks to make it reveal its own nature. By so doing we shall learn many startling facts, and almost before we know it we shall have laid the groundwork for a good electrical education. No longer shall we remain dumbfounded by wonderful electrical devices we find about us in our daily lives. In no small measure we shall know how they operate, how to repair them, and how to build ourselves electrical toys and devices which will afford countless hours of pleasure, especially during the winter season when the baseball and football fields are covered with snow.⁵⁰⁷

Yates finishes his introduction with a reference to the modern, stating that 'The modern boy is fortunate that he may occupy his time with such adventures.'⁵⁰⁸ The projects described in this book are designed to be affordable for the majority of boys. A small radio for personal use features in the book, alongside the claim that it will not interfere with the family set and can at times pick up alternative stations that a larger set may not.⁵⁰⁹ The production of small electrical toys thus includes and parallels the hobbyist culture surrounding radio among adults as will be discussed in the following section. Aside from the purposes of education and amusement, the building of electrical toys offered a means by which young boys could demonstrate their knowledge and skill to their friends and neighbours. A specific example of this is seen in the instructions for the Telegram in Yates' book, which claims that once built, it can be used to communicate between neighbours' houses, or the explanation of how to transmit pictures by wire that can then be shown to friends.⁵¹⁰ These uses are a direct performance of technical knowledge and ability. In addition the regular competitions in *Meccano Magazine* and use of the slogan, 'To help Meccano Boys have more fun than other boys', reinforces the competitive and social nature of construction kits.⁵¹¹

⁵⁰⁷ Yates, R., (1937): p25. Dedicated to his son Brock Wendel Yates '...who discovered the strange, mysterious force of electricity at the tender age of three, when he stuck a hairpin in an electric outlet.'

⁵⁰⁸ Yates, R., (1937): pviii.

⁵⁰⁹ Yates, R., (1937): p113.

⁵¹⁰ Yates, R., (1937).

⁵¹¹ Brittaine, J., (1987): p448.

This section has so far covered the history and development of electrically powered toys in the home prior to 1960, and their position within a hobbyist culture of construction and model kits. Electrical toys raise the issue of electrical safety for children, particularly where mains electricity was involved, and it is this that I now wish to comment on.



Image 5.6. 'M.E' Interlocked Switch plates' for Electrical Safety.⁵¹²

Image 5.6., was accompanied by the title, 'Children's mischievous pranks need give rise to no alarm when 'M.E' Interlocked Switch plates are installed,' and accompanied an article on electrical safety outlets and interlocked switch plugs in the *Electrical Age*.⁵¹³ It helps to show how electricity supply itself interacted with spaces of play, providing power for light to extend leisure hours and providing power for electrical toys, but also as a direct safety concern. In his children's book *The Master Key: An Electrical Fairy Tale*, L. Frank Baum presents concerns about electrical safety as a stark contrast to optimism about new technologies exhibited in the early twentieth century through a dialogue between two parents:

⁵¹² Anon., (1929) 'A Chat on Electrical Outlets and Outlet Equipment' In *The Electrical Age* 1(11): p412.

⁵¹³ Anon., (1929) 'A Chat on Electrical Outlets and Outlet Equipment' In *The Electrical Age* 1(11): p412.

"Electricity," said the old gentleman, sagely, "is destined to become the motive power of the world. The future advance of civilisation will be along electrical lines. Our boy may become a great inventor and astonish the world with his wonderful creations".

"And in the meantime," said the mother, despairingly, "we shall all be electrocuted, or the house burned down by crossed wires, or we shall be blown into an eternity by an explosion of chemicals!"⁵¹⁴

In his prose L. Frank Baum both represents the concerns of everyday people but also dismisses them as significant worries. Wariness of electricity was not limited to the dangers of its use by children but was a more pervasive concern throughout the 1930s, 1940s and 1950s, as it was gradually introduced throughout Britain.⁵¹⁵

Athelstan and Spilhaus in their study of early mechanical toys make the statement that transformers were nearly always used in electrical toys that ran on mains electricity. This was in order to protect children from the dangers of electrical shock.⁵¹⁶ However, safety was a concern for manufacturers, retailers and consumers alike throughout the period between 1920 and 1960. The following extract from an article in the *Manchester Guardian* on 11th December, 1926 indicates that the Home Office also had concerns about toys powered by mains electricity:

Toy dealers who supply these working models are naturally indignant at the recent Home Office Warning as to the alleged danger of electrical toys worked from the domestic current. They claim that the worst that could happen would be the burning out of a fuse. But, whether the Home Office is right or no, it would be a superhumanly self-sacrificing boy and an unnaturally cautious parent who could lay aside these models once they had seen them; for the attachment of a plug is simplicity itself, and avoids the expense of continually recharging accumulators.⁵¹⁷

Despite warnings about the danger of electrical toys, they are here promoted as a desirable Christmas gift and one that can be operated simply and enjoyed. Their novelty and popularity are presented as overriding any safety concerns. The safety of electrical toys remained a government concern throughout the period I have studied. A 1960 article in the *Guardian*

⁵¹⁴ Quoted in Schlesinger, H., (2010): p201

⁵¹⁵ See Chapter 2 on the development of the National Grid and how electricity was presented as commensurable with the domestic environment in order to sell it to the masses.

⁵¹⁶ Spilhaus, A & Spilhaus, K., (1989): p66.

⁵¹⁷ 'Christmas Toys in the Manchester Shops' *Manchester Guardian*, 11th December 1926: p8.

reporting on the first interim report by the Committee on Consumer Protection for Regulation of the Sale of Unsafe Goods featured electrical toys. They were required ‘to be operated only at low voltage with the use of a proper transformer’ to avoid any accidents.⁵¹⁸ This acknowledgement and reinforcement of the need for transformers to avoid accidents undermines the claim of Athelstan and Spilhaus that nearly all toys using mains electricity had a transformer by suggesting that it was a long time before this was the case and many manufacturers continued to omit them prior to 1960.

Adult concerns about the electrically safety of their children also prompts questions about who was the actual consumer of electrical entertainments and toys. It was adults who were making the decisions about appropriate and desirable toys for children and primarily purchasing these technologies in the majority of cases. While pocket money allowed children to make a degree of choice as consumers by making small toys and electrical components affordable, as discussed earlier, the degree to which parents guided these choices is unknown and potentially inaccessible. The earlier quote from Mrs Veneer further complicates this question about the power balance in the relationship between parents and children by providing an example of how a child’s gratification could determine decisions within the household. Similarly Image 5.5. advertises that Meccano model building was a form of play that required the supervision or interaction of parents and both recognises and constructs the roles of parents in guiding children’s leisure pursuits. It also reveals further limits on the agency of children in relation to the use of electrical toys.

The consumption of electrical toys was linked to available spaces that determined the ways in which electrical toys were used. It was not necessarily the user of electric toys who was the consumer and children were not exerting independent choice in the consumption of electric toys. Boys were not the only individuals in the household to consume electric toys, adults also collected Hornby sets and as well as being a hobby for boys, radio construction offered a past-time for men. The following section will consider the radio as a technical hobby for men before focusing on the radio in the home during the 1930s and 1940s.

5.3. Men and Radio

The use of construction kits by boys can be extended to the construction of radios by both father and son. In this sense adult men were engaging in similar specifically male dominated technical hobbies within the home as part of the increased home-based leisure

⁵¹⁸ ‘Ban on sale of unsafe goods proposed’, *The Guardian*, 27th April 1960: p2.

discussed at the beginning of this chapter. In this section I will focus on the male participation in the hobbyist culture surrounding the radio. I will consider specialist knowledge and technical ability, dedicated spaces for radio construction, and noise in relation to the radio and masculinity. As demonstrated in the introduction to this chapter radio appeared as a domestic electrical technology in the 1910s and 1920s, particularly in relation to male hobbies and the crystal radio set, yet the focus in this chapter will predominantly be on its use in the 1930s and 1940s.⁵¹⁹ This is because by this time the radio had become a mass consumed appliance for all of the family as opposed to a collection of apparatus that could only be used by one individual at a time.

Norman Townson's father was a delivery man living in a terraced house in Skerton, Lancaster, with an early interest in radio. He provides an example of a man engaging in the technical and performative aspects of radio during the 1920s and 1930s, as described by his son:

He was interested in radio, although obviously he couldn't have had much money, I believe he was one of the first people in the area to get a radio which had a loud speaker rather than just a crystal set where you listened though headphones.⁵²⁰

Norman Townson's father also extended his technical interests to the maintenance and repair of radios for his friends and neighbours:

He used to repair them and he had enough knowledge to fix broken radios, from neighbours up the street. And often in those days, and again I'm talking about the late forties early fifties, radios used valves, and they weren't very reliable and very often if a radio failed, it was often one of the valves that had gone and he'd get in the back there and find out which one it was and change the valve.⁵²¹

As well as being an expression of his technical ability this was a sideline job that bought in a small amount of extra money for the family. The process of maintenance and repair illustrated here reveals how consumers kept their radios in working order, independently of the services of manufacturing companies and the sales industry.

⁵¹⁹ There are a large number of existing histories of early radio in Britain and America. See Geddes, K. & Bussey, G. (1991); Haring, K. (2007).

⁵²⁰ Townson, N., Oral History Interview, August 2010.

⁵²¹ Townson, N., Oral History Interview, August 2010.

The building, maintenance and repair of the radio in particular, was a predominantly male hobby as identified recently in the work of Kristen Haring (2007). The ham radio technical culture that Haring outlines as existing in America reached 200 000 participants in 1960 and was also present to a lesser degree in Britain, where there were approximately 9 400 participants.⁵²² In addition Haring claims that hobbyist activities took place in specifically male territories aside from the domestic sphere, such as the garden shed or attic workroom. There is little evidence to support a similar conclusion for hobbyist activities in Britain, but it is likely that such male dominated spaces constructed around the technical aspects of radio did exist in small numbers.

Whilst there is ample evidence to support the notion that the technical culture surrounding radio was male dominated, the Electrical Association for Women (EAW) and its supporters did not consider the building and maintenance of radio to be beyond the technical ability of women. The Edison Swan Electric Co. exhibited a simple set of components at the September 1927 Radio Exhibition that required no soldering and only five connections. In his article of the same year in the *Electrical Age for Women*, Bernard Holding, then editor for the *Electrician*, suggested this as ideal for ladies who were interested in the construction of wireless but found the circuits and processes involved a little beyond them.⁵²³ Instructions were later offered in the same journal in 1929, for girls and women who wished to make their own sets. Beatrice Shilling, an electrical engineering apprentice, wrote on how to construct a home wireless set, directing her comments at those families with no brothers or fathers to construct sets for them. She opens with the claim that many families, who do not yet possess a wireless, do not because of cost, disinterest or a lack of technical ability to build, set up and maintain their own set.⁵²⁴ Beatrice Shilling claims that, women, if they ‘...can use a screwdriver, pliers, and a file, should be easily able to tackle the job.’⁵²⁵ Whilst the EAW was clearly attempting to encourage women to take a technical interest in the radio only a small number of women participated in this hobbyist culture.

There were a small number of books on the technical aspects of radio available to those who could read and understand them. For example, Norman Townson’s father owned a copy of ‘The Manual of Modern Radio’. It was through reading this that Norman Townson

⁵²² Haring, K., (2007).

⁵²³ Holding, B.C., (1927) ‘Radio in the Home’ In *The Electrical Age* 1(6): p212. Bernard. C. Holding was the editor for The Electrician at this time.

⁵²⁴ Shilling, B., (1929) ‘Wireless’ In *The Electrical Age* 1(12): p458. (n.b. accompanied with diagrams to show how to set it up) Beatrice Shilling was an Electrical Engineering Apprentice.

⁵²⁵ Shilling, B., (1929) ‘Wireless’ In *The Electrical Age* 1(12): p458.

himself developed an interest in electronics. He went on to build his own radio, as he described:

And I used to get pocket money, something like half a crown a week, and I used to save up the pocket money and eventually bought enough components to make a crystal set and having got the crystal set going the big problem then was, I didn't have any headphones and I think I'd got the crystal set going sometime during another summer holiday, probably about a year later, and I had to wait until Christmas, until my parents bought me a pair of headphones, which were quite expensive, thirty shillings I think they had to pay for them. And that was my first little radio (laughs)⁵²⁶

As a testament to the technical culture of radio a large number of technical journals also became available in Britain during the 1920s, reaching their peak around 1930.⁵²⁷ These included such titles as *Radio* in 1924 and *The Radio Mail* in 1925. Among the titles of longer running publications were *Amateur Wireless and Electricity* beginning in 1922 until 1935, having become *Amateur Wireless and Radiovision* in 1928; and *Gramophone, Wireless and Talking Machine News* beginning in 1923 and becoming *Gramophone and Radio News* in 1929 until 1931. There was also *Practical Radio* from 1931-1933 and the weekly *Practical Wireless*, that began as a supplement in 1932. Radio also became a dominant feature of *Electrical Trading* when it became *Electrical Trading and Radio Marketing* in 1939 and from 1945 onwards *Electrical and Radio Trading*.

The possession of electrical appliances to enhance leisure, and the ability to use and maintain them can be viewed as acts of performance. Ownership of these, primarily luxury consumer items, demonstrated to family, friends and neighbours the ability to afford and aspire to modernity within the home, and participate in the latest technological trends. It was an outward-looking public demonstration of the private means and ethos of individuals within the home. Norman Townson's father's interest in radio, allegedly, prompted him to purchase a new and more up-to-date radio than those owned by his neighbours. In consequence friends and neighbours would gather outside to listen communally to programmes on the radio. Norman Townson described one example of such an event, '...roundabout 1930, he used to have a radio, which I've still got up in the loft, and it used to have a loud speaker on it, and

⁵²⁶ Townson, N., Oral History Interview, August 2010.

⁵²⁷ In women's magazines electrical technologies for entertainment are under-represented. The primary material on radio, in the form of magazines, trade literature and government publications both in terms of the technical aspects and programming is however extensive and more than could be covered in this chapter. As such I have focused my attention on consumer letters and a survey of the types, numbers and publication dates of the various specialist magazines.

some of the neighbours used to come around and stand outside the door and listen to concerts on the...on the radio.⁵²⁸ Such communal gatherings can be viewed as a public demonstration of ownership and modernity. It is, however, likely that different groups in society bought different social values and political opinions to their participation in this as a communal activity that would have differentiated their experiences.

In the next section I want to focus more specifically on listening practices within the home from 1930 onwards and the use of the radio as a focus for family entertainment in the home to show the differences in opinions and consumer choice of programming.

5.4. Family Relationships and the Radio

As well as being a technical hobby for men and young boys, radio was (and is) a form of entertainment for the whole family. In his 1995 study of artificial light in the nineteenth century Schivelbusch asserted that the radio became an alternative point to the fireplace, around which the family could gather. Similarly Schlesinger claimed the radio became a focal point in the home, ‘taking up residence in the parlour or living room, displacing the piano as the family’s primary source of entertainment.’⁵²⁹ Schivelbusch sees the successful adoption of electrical appliances as linked to their commensurability with traditional family practices.⁵³⁰ In this section I will explore this idea in more detail using images of the radio as family entertainment and question the extent to which the radio formed the nucleus of family socialisation. I will also discuss the portability of radio and the fact that it was not confined to a single space in the home. Finally I will consider the differences in choice of radio programme among different family members and individuals and listening practices.

The radio, and later also the television, were primarily but not exclusively, used within the four walls of the private home. The radio was recognised by the electrical industry and users alike as being for use in the parlour or family living space. In order to comply with the aesthetics of the home, radio receiving sets were designed to harmonise with the surroundings of the drawing room and remain inconspicuous. An anonymous article in an early issue of the *Electrical Age* on ‘Radio and Furnishings’ claimed that such a demand had been met in two different ways, ‘Firstly, in the refinement of the shape and finish of the apparatus, the function

⁵²⁸ Townson, N., Oral History Interview, August 2010

⁵²⁹ Schlesinger, H., (2010): p219.

⁵³⁰ Schivelbusch, W., (1995): p179.

of which remains obvious to all; and, secondly in disguising the apparatus in such a way that it appears to be something entirely different.⁵³¹ The article went on to describe how:

From an object which was only admitted to the drawing-room on sufferance, and even then had to be hidden behind furniture or pushed into a corner when visitors were about, the wireless receiving set has developed into a neat and, sometimes, decorative article, which takes its place naturally among the furnishings of the home, and is far less disturbing to the eye than the unwieldy and unsightly pianoforte, although its entertainment value is so much greater.⁵³²

Modern apparatus thus appeared to be out of place in the turn of the century drawing room but was nevertheless accommodated as a valuable form of entertainment. Such articles attempted to resign housewives to the inevitability of radio and reassure them that it would be situated in the home in an aesthetically pleasing way. A 1927 article from the *Electrical Age* for women also describes how women can customise the appearance using various paints, transfers and stencils to bring it into accord with other items in the living space.⁵³³ These articles seem more concerned with women's accommodation of these technologies in their home than their use. Keir Keightly considers the importance of aesthetics in the introduction of electrical equipment to the home as a feminine concern, conflating sex differences with those of taste.⁵³⁴

In practice the majority of listeners used crystal sets with headphones attached and an array of wires protruding all around well into the 1930s. The irony of the term wireless⁵³⁵ is well illustrated in Image 5.7., of the arrangements of the aerial and earth for early radio sets, extending well beyond the four walls of the house.

⁵³¹ Anon., (1926) 'Radio and Furnishings' In *The Electrical Age* 1(2): p68.

⁵³² Anon., (1926) 'Radio and Furnishings' In *The Electrical Age* 1(2): p68-69.

⁵³³ Holding, B.C., (1927) 'Radio in the Home' In *The Electrical Age* 1(6): p211.

⁵³⁴ Keightley, K., (1996): p162 and p168

⁵³⁵ The term wireless used in Britain came to be replaced colloquially by the American term radio and as such I have used the two terms interchangeably.

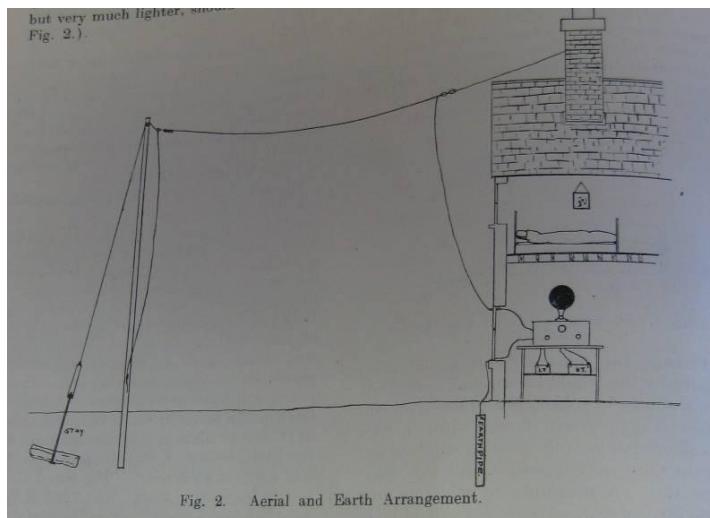


Image 5.7. Aerial and Earth Arrangements for the Wireless, 1929.⁵³⁶

This image is not in agreement with the descriptions of harmonious aesthetics and practical considerations laid out in the articles discussed above. The solution to this was the advent of self-contained portable appliances as outlined in the following from the *Electrical Age* in 1927:

For those who are absolutely against the use of any interior wiring in their homes, and indeed, for those who are not so particular on this score, the portable wireless receiving set – which requires no separate aerial or earth connection, and contains its own batteries and loud speaker in the same cabinet – is a piece of apparatus which can satisfy many varied requirements in the home.⁵³⁷

Polished wood or moulded Bakelite cases were not a common component until the 1930s and even then were still not ubiquitous. Battery driven radios created further concern among consumers about replacing accumulators and recharging batteries. According to E.C. Ambler in an article on the All-electric radio for the *Electrical Age*, ‘The picture of the wireless enthusiast staggering to the charging station with his battery has provided many cartoonists with the material for humour...’⁵³⁸ This was a difficulty that had been overcome by 1930, through the provision of mains powered electric radio sets but portable sets also remained in use alongside these.⁵³⁹

⁵³⁶ Image of Aerial and Earth Arrangement accompanying article by Beatrice Shilling. Shilling, B., (1929) ‘Wireless’ In *The Electrical Age* 1(12): p460.

⁵³⁷ Holding, B.C., (1927) ‘Radio in the Home’ In *The Electrical Age* 1(6): p211.

⁵³⁸ Ambler, E. C., (1930) ‘All-Electric Radio’ In *The Electrical Age* 1(15): p593.

⁵³⁹ Ambler, E. C., (1930) ‘All-Electric Radio’ In *The Electrical Age* 1(15): p593-4.

However it was designed and adapted for accommodation in the home practically and aesthetically, the radio was a form of entertainment for all the family. Images 5.8. and 5.9., produced as publicity for inclusion in the *Daily Herald* in 1931 and 1945 depict families collected around the radio to listen. They illustrate how the design of the radio fits neatly with the décor of the living space in which it is being used and its central location within family gatherings. Their provenance makes it reasonable to assume that these were staged in order to draw the attention of middle and working class audiences to the radio and to the ideal of the family.



Image 5.8. Family listening to the radio, 1931.⁵⁴⁰



Image 5.9. Family gathered around the radio, 1945.⁵⁴¹

⁵⁴⁰ Science and Society Picture Library, Daily Herald Archive (1931).

Nevertheless the location of the radio in the living space is supported by a wide range of sources. For instance, women's magazines regularly make reference to the place of the radio in articles addressing interior design and the organisation of the ideal home.⁵⁴²

The radio was increasingly a highly portable appliance that could be used in any space within the home, as wiring was extended. As well as providing a focal point for the family in the living room it could be used privately in personal spaces within the home such as individual bedrooms or even transported outside of the home. Images 5.10. and 5.11. show the radio being used outside of the home in the 1930s and in 1956.



Image 5.10. Listening to the radio on a boat, 1930s.⁵⁴³



Image 5.11. Listening to the radio in the Garden, 1956.⁵⁴⁴

⁵⁴¹ Science and Society Picture Library, Daily Herald Archive (1945).

⁵⁴² Anon., (1926) 'Radio and Furnishings' In *The Electrical Age* 1(2) is just one example of numerous similar discussions of how to blend the radio with the furnishings of the home. See also Moores, S. (1988).

⁵⁴³ Science and Society Picture Library (1930s).

Changes in the way people spent their leisure time had implications for the relationships between different members of the family, specifically as it became increasingly home based. If we accept the ideal image of the family collected around the radio, so often presented in magazine and newspaper images, we must consider how the use of the radio was negotiated between different family members. Also how were the variety of preferences and choices within the household accommodated?

In an official BBC history of broadcasting in 1992 the familial aspects of radio were emphasised to support the claim that the social effects of radio were becoming apparent by the mid-thirties, ‘...listening as a family practice grew, especially at weekends. People gathered together to hear national and sporting events.’⁵⁴⁵ The following letter from the *Radio Times* on 8th September, 1939, provides just one real example of the whole family sitting down to listen to a broadcast:

‘A Family Affair’

National – 10.20 Dance Cabaret – Friday, August 18, 1939. A family party listening to this broadcast send the following notes.

The youngest member gave it as her opinion that the BBC should be at liberty to broadcast the world as it found it.

Auntie thought the entertainment well suited to the well-fed and well-wined – but not for a lean and hungry world.

Pa, ma, and Uncle owned to involuntary laughs – and to subsequent nausea – and all felt sympathy with the BBC in their difficult task.⁵⁴⁶

In addition to providing a concrete example of an instance in which the whole family sat down to listen together, this letter also emphasises the range of opinions and preferences within a single family circle. In Margaret Foster’s 1995 family biography, *Hidden Lives: a family memoir*, she highlights the conflicting preferences of her parents when listening to the radio, ‘In the winter they both listened to the wireless, though there was some clash here – Arthur liked sport, any sport, and variety and light comedy, and Lily liked hymn singing and plays and stories and talks.’⁵⁴⁷ Radio programmes as well as bringing family members together fractured opinions and would have led to negotiations about use. A letter in a later issue of the *Radio*

⁵⁴⁴ Science and Society Picture Library (1956).

⁵⁴⁵ Cain, J., (1992): p22.

⁵⁴⁶ Richards, W., (1939) ‘A Family Affair’ in *Radio Times*, 64(832): p9.

⁵⁴⁷ Forster, M., (1995): p97.

Times on 25th October 1946 reveals a housewife's concern about being able to listen to a whole programme as a consequence of conflicting needs and desires of the rest of the family:

'Housewives Plain'

I am what is known as a housewife, closely bound by copious domesticity, but having strong cultural interests.

Therefore, as a keenly interested and selective listener, I heartily and gratefully applaud the advent of the Third Programme, which does, indeed, meet a great need. But I also strongly endorse the recent opinion expressed in the press that the present 'peak' programmes are too long. Sustained adult concentration is one of the most exhilarating of mental activities; but all the planning and determination in the world will not stop humanity in the home from clamouring for its material needs!

The great complexity of conflicting tastes within the household has also to be considered. One may plead and expect tolerance for an hour's listening but not for that which occupies the whole evening. – (Mrs.) Marion Hampton, Swindon, Wilts.⁵⁴⁸

Mrs Marion Hampton felt that it was unreasonable to expect her family to tolerate her listening to the radio for longer than hour. Negotiations over programme choice would have been necessary.

Choice over programming was however limited to what was provided and consumers complained about the quality of programming. In a letter to the *Radio Times* in 1939, T.E.H. Weeks from Carlisle expressed his concerns about BBC programmes:

'Decline and Fall'

I think that the BBC used to be an admirable, if not perfect, organisation. The programmes used to be bright, interesting, and clean, and both performers and audience were treated as human beings and with respect. I think that during the last six months the programmes have deteriorated in many directions. They are, for the most part, dull and scrappy, and I am tired of propaganda. The plays are about the only items that remain good.

Variety has sunk to a very low level, and many jokes are not only suggestive but downright filthy. The way that programmes which slightly overrun are switched off is unfair to the listener, discourteous to the performers, and an insult to the composer

⁵⁴⁸ Hampton, M., (1946) 'Housewives plaint' In *Radio Times* 93(1204): p5.

of the work. It destroys the pleasure of listening to almost every programme, as one is never sure whether the whole thing is going to be spoilt by being unfinished⁵⁴⁹

Another and later example is found in a letter to the editor of the *Financial Times* in 1955. Having missed the Test Match at Old Trafford on the previous Friday due to an earlier programme over running and causing the programme schedule to be altered, a reader of the *Financial Times* wrote in: 'The B.B.C. programme on Friday night seemed to me to provide the perfect example of the way in which a public monopoly can insult the wishes of its audience rather than cater to them.'⁵⁵⁰ The audience thus recognised the responsibility of the industry in catering to the consumers choices.

As well as the BBC, alternative radio stations attracted large audiences across Britain, in particular Radio Luxemburg. An audience survey in November 1955 that registered a drop in listener numbers was later corrected by a follow up survey by Social Surveys Ltd. The later survey revealed that despite the Radio Jamming of East European stations that seriously affected British transmissions the number of people who had listened or attempted to listen was comparable to the previous year.⁵⁵¹ In relation to programming, broadcasters had a responsibility to the listener. In 1935, H. Cantrill and G.W. Allport in America produced a psychological study of the radio that considered the moral agency of the radio. They stated that:

The radio is a modern substitute for the hearthside, and a family seated before it is obedient to its own conventional habits and taboos. The radio dares not violate those attitudes fundamental in the great American home. It does not dare broadcast programmes dealing too frankly with crime, rebellion, or infidelity.⁵⁵²

The nature of the domestic environment impinged upon the content that was most appropriate in order to maximise 'audience receptivity'.⁵⁵³ In Britain the BBC employed restrictions on acceptable content for the radio, 'Jokes about drunkenness, religion, infidelity, effeminacy and human infirmities were unacceptable, as were racist references.'⁵⁵⁴

There is a large body of literature on listening practices in relation to the introduction of the radio that I wish to focus on in the final part of this section. Shaun Moores' article on

⁵⁴⁹ Weeks, T.E.H., (1939) 'Decline and Fall' In the *Radio Times* 64(832): p9.

⁵⁵⁰ M.A.W., 'TV Programmes', *The Financial Times*, 15th July 1955: p8.

⁵⁵¹ Cave, G. C., 'Who Listens to Radio? Luxemburg Audiences', *The Financial Times*, 2nd June 1956: p4.

⁵⁵² Cantril, H. & Allport, G. W., (1935): p15.

⁵⁵³ Rotha, P., ed. (1956): p10.

⁵⁵⁴ Cain, J., (1992): p22.

early radio, considers how early listening practices were associated with the novelty of the technology and individuals were more concerned with the means of reception and receiving some information than on the content of it.⁵⁵⁵ This was partly due to the technical limitations of early sets that required headphones to listen in. In Cantril and Allport's 1935 study of the psychological impact of the radio in America, they recognise that the radio altered the domestic environment through sound, 'The ease of tuning in, together with the lack of obligation to listen has created a new type of auditory background for life within the home.'⁵⁵⁶ They question whether such a new auditory background in the home environment may have an effect on powers of concentration, habits of listening, and nerves. Their work reveals a contemporary awareness, if not by the public then at least within academic circles, of the changing sounds in the home. It does not, explore more broadly the impact this might have on social and gender relationships. However, an earlier article by P.P. Eckersley on 'The Psychology of Listening' in the British journal *Radio* had done just that. Eckersley discussed the prevalent idea that broadcasting was killing conversation, 'the awful spectacle was imagined of the silent household, head 'phones on ears, not a word spoken – the art of conversation dying.'⁵⁵⁷ He questions the extent to which conversation had been prevalent beforehand and the existence of a significant impact on relationships with the advent of broadcasting.

The psychological study of the social impact of radio in America in 1935, introduced previously, also considered the personal and impersonal nature of the radio.⁵⁵⁸ It was suggested that the radio provided a sense of participation in a common activity that promoted social unity. The radio was also viewed by these psychologists as a powerful agent of democracy, responsible for standardisation in habits of listening.⁵⁵⁹ However the 'audience' of Cantrill and Allport is an invented body of listeners with a uniform taste as opposed to containing variety of identities and choices.⁵⁶⁰

The radio was incorporated into the space of the home, through aesthetic designs that were commensurable with domestic interiors. It provided a focus for family entertainment but also allowed different individuals to listen in in their own personal space and to their own choice of programme. Individuals within the home were not only consuming modern electrical technologies through the radio but also modern ideas, since it is a form of modern mass

⁵⁵⁵ Moores, S., (1988): pp27-28.

⁵⁵⁶ Cantril, H. & Allport, G. W., (1935): p25.

⁵⁵⁷ Eckersley, P. P., (1924) 'The psychology of listening' in *Radio* 1(1): p15.

⁵⁵⁸ Cantril, H. & Allport, G. W., (1935): p3.

⁵⁵⁹ Cantril, H. & Allport, G. W., (1935): p22-23.

⁵⁶⁰ Douglas, S. J., (2004): p131.

communication. Finally I want to focus specifically on the ‘housewife consumer’ as an audience for the radio and messages about electricity and electrical appliances that were broadcast.

5.5. Women Listeners

Women listened to the radio as an accompaniment to their daily housework. I will briefly consider the communication of modern ideals and the advertising of electrical technologies through the radio as a means of conveying ideals of domesticity and electrical products to the ‘housewife consumer’.

The radio may have initiated as a technical hobby of men but a widely held view of historians is that listening to the radio became a source of entertainment primarily for women. This brings to light gender differences in the use of this specific technology. For the housewife radio programmes could offer an accompaniment to household tasks, such as ironing.⁵⁶¹ In 1924 Edith Shackleton wrote in *Radio* that industrious housewives, ‘...will be able to go on virtuously with the darning or silver polishing or pastry making while listening to an orchestra, or a talk on letters, or dress, or even on housewifery itself.’⁵⁶² The following letter to the *Radio Times* on 20th October 1939 provides an example of a housewife who did listen to the radio whilst doing the washing up:

‘Music to Washing Up’

Hurrah for the BBC Salon Orchestra! At last the poor housewives have something *really* good, also cheerful and bright , to look forward to, if only for three-quarters of an hour during their tedious duties in the mornings – *From one of your most appreciative listeners, Peterborough, Northamptonshire.*⁵⁶³

Not all housewives listened to the radio alongside their work, however and in some instances housework was an impediment to her ability to enjoy leisurely entertainment from listening to the radio. Programming for the radio in the interwar years did not specifically accommodate women to the degree we might expect as principal listeners, with the first Women’s Hour being broadcast in 1946.

⁵⁶¹ Listening to the radio during ironing produced early problems of electrical interference in the reception of radio programmes.

⁵⁶² Shackleton, E., (1924) ‘Wireless and the Woman at Home’ In *Radio*: p7.

⁵⁶³ Anon., (1939) ‘Music To Washing Up’ In *Radio Times* 65(838): p9.

The creation of a common cultural experience had important implications for the housewife, by reducing the effects of isolation.⁵⁶⁴ It helped to construct imagined communities of listeners linked by their common interests.⁵⁶⁵ Edith Shackleton claimed in an article for *The Electrical Age* that the rural home could be ‘once more in the main stream of events’ and could escape the depression of spending a day in solitude.⁵⁶⁶ Mrs H.A.L Fisher expressed a similar view in 1925, stating that the radio, ‘...penetrates into homes, and it affects, as possibly hardly anything else has affected, the life not only of the ordinary man, but still more that of the ordinary woman, the woman who lives at home.’⁵⁶⁷ Women could feel engaged with public affairs outside of the home through the news and by becoming part of the audience for broadcasts on the radio.⁵⁶⁸

Electrical products and notions of modernity and domesticity were being broadcast, as an alternative media to visual adverts and exhibits.⁵⁶⁹ The value of radio in sales was conveyed in the following statement from an article on ‘Selling by Radio’ in *Radio* in 1925:

Personal salesmanship has been made a science; written salesmanship is being rapidly developed. The possibilities of using radio must not be neglected – correctly used it is capable of being made a valuable aid to sales.⁵⁷⁰

Shaun Moore has discussed how daytime features on the radio specifically addressed the roles of women, offering advice on family and household management and reinforcing the housewife’s role as responsible for the health and welfare of the family, discussed in Chapters 3 and 4.⁵⁷¹ The home has been viewed by historian S. Yusaf as a mass-produced and mass-consumed item in the same way as the commodities which were consumed within it. For William Boddy, broadcasting on the radio ‘represented an unprecedented integration of the home with the time values and economic imperatives of large-scale capitalism.’⁵⁷² The radio opened up another medium with which the ‘consumer housewife’ could be targeted by advertising. In this capacity as advertising radio helped to construct and develop consumerism in Britain. The radio was being consumed in different ways for different purposes by individuals within the home.

⁵⁶⁴ See Hagget, A. and Hayward, R., Chapters in Jackson, M., ed. (2007).

⁵⁶⁵ Douglas, S. J., (2004): p11.

⁵⁶⁶ Shackleton, E., ‘Wireless and the Woman at Home’ in *Radio* 1924: p7.

⁵⁶⁷ Fisher, H.A.L., (1925) ‘The Wireless Revolution’ in *Radio* 1(5): p6.

⁵⁶⁸ Moore, S., (1988); Douglas, S. J. (2004).

⁵⁶⁹ Yusaf, S., (2011): pp551-573.

⁵⁷⁰ Powell, J.W., (1925) ‘Selling by Radio’ in *Radio* 1(4): p29.

⁵⁷¹ Moore, S., (1988): pp34-35.

⁵⁷² Boddy, W., (2004): p16.

5.6. Conclusion

Electrical technologies associated with leisure demonstrated consumption patterns of rapid peaks unlike the gradual adoption of household appliances. In the inter-war period as meanings of the home shifted from the home as a centre of production to a centre of consumption, leisure time became increasingly home-based. The re-accommodation of various available spaces in the home for the purpose of leisure illustrates the fluid nature of domestic space and how it was characterised by the activities occurring in it at any specific moment. The use of electrical technologies in spaces in the home changed as technologies developed or altered. For example improved battery power changed the possible places in which electrical toys and radios can be used, even extending their consumption beyond the boundaries of the home. The use of electrical technologies in leisure indicates how technologies were consumed variously by different individuals in the home, because there were both gender and intergenerational difference in their use within the home. For instance whilst both men and women listened to the radio there were gender differences in its use, some housewives listened as an accompaniment to housework and some men participated in the technical hobbyist culture of radio. It was not only radio technologies that were being consumed but modern ideas and modern communication. The radio as an electrical appliance bridges the period under study in this thesis being an early technical appliance, the design of which changed with Bakelite and wooden casings to promote its accommodation in the modern domestic interior alongside the building of the national grid, and becoming a technology around which family leisure was ideally centred in the modern home of the 1930s and 1940s.

Chapter 6

Grooming



Image 6.1. An article from *The Daily Mirror* describing an electrical accident in the bathroom in 1952.⁵⁷³

The newspaper article in Image 6.1. is from a 1952 edition of *The Daily Mirror* and describes how a teenage girl was accidentally electrocuted as a consequence of the faulty wiring of an electric towel rail in the bathroom. The fear of electrical accidents and concerns about electrical safety were particularly pertinent to the domestic consumption of electricity because as we have seen previously the home was inherently viewed as a safe and secure environment.⁵⁷⁴ In Chapter 5, I discussed the concerns of consumers about the safety of electrical toys and there were also many concerns about the use of electrical appliances in the bathroom, particularly due to the close proximity of water. Another and much earlier example of the dangers of electricity is an accident reported in the *Daily Mirror* in 1929. In this instance

⁵⁷³ "Live' Towel Rail Killed Joyce", *The Daily Mirror*, 7th October 1952: p9.

⁵⁷⁴ I have considered the domestic space of the home and its varied meanings in the Introduction of the thesis.

thirty five year old William Edgar Barrett was found dead in his bath and it was believed that he was electrocuted by a portable stove that he had taken into the bathroom with him.⁵⁷⁵ A report in the 1930s found 10 000 persons at least were injured annually in bathrooms, 'by slipping, by gas poisoning, or by electrocution.'⁵⁷⁶ Graeme Gooday has written about the origins of fears about the dangers of electricity in the nineteenth century. He views it as a complicated entity that both posed a danger but also had a long history as a therapeutic treatment. Furthermore he complicates the use of the term 'accident' highlighting how often the presence or use of electricity is not the only contributing factor in the outcome of events. The electrical industry employed marketing tactics to overcome such fears, sponsoring educational exhibits, displaying technical expertise, and promoting electricity as safe, hygienic and feminine.⁵⁷⁷ The spread of electrical power in the home from 1927 and the fact that people were beginning to welcome electricity into their homes suggests that the fears described in Gooday's account had largely been overcome by the marketing of the electrical industry. There were however some individuals who remained wary of the health and safety risks of electricity in the home. In 1954 the safety of children in the home became a concern for Lord Crook, who brought it to the attention of the House of Lords. He found there to be 24 fatal accidents in the home every day and that more children under 15 died in home accidents than any other form of accident.⁵⁷⁸ In part he attributed this to the perils of electricity, specifically, 'Lord Crook said matters which could be looked into were the sale of such items as a hair-dryer without a warning notice that its use in the bathroom was a potential danger ...'⁵⁷⁹ Centring on the 1950s this chapter will focus on the bathroom and its development as an electrical space. Case studies of electric razors and hairdryers that were used within it for the purposes of personal care will be developed to give insights into the transformation of alternative electrical spaces for personal care and gendered marketing tactics

The initial section of this Chapter will discuss how the 1950s middle class bathroom had emerged as a dedicated space within the home for personal cleanliness in contrast to existing spaces in use by individuals from different classes. It will also explore the relationship between electricity and the bathroom. I want to use the example of the bathroom to reinforce the argument that domestic spaces have multiple meanings and uses in relation to electricity and provide a concrete example of how electrical safety concerns altered and defined the location of use of electrical appliances and the siting of health and beauty practices in the

⁵⁷⁵ 'Found Dead in Bath', *The Daily Mirror*, 29th October 1929: p2.

⁵⁷⁶ A. J. Lamb quoted in Wright, L., (1960): p263.

⁵⁷⁷ Gooday, G., (2008): p61, pp91-119.

⁵⁷⁸ 'Accidents in the Home: Traps for Children', *Manchester Guardian*, 9th December 1954: p2.

⁵⁷⁹ 'Accidents in the Home: Traps for Children', *Manchester Guardian*, 9th December 1954: p2.

Investigate
this 'accident'

Can I make
comparisons

home. The bathroom and practices which occur within it also illustrate the gendered nature of different spaces and the aspirational nature of electrical appliances.

From the specific space of the bathroom I will move on to develop case studies of the electric hairdryer and electric razors as electrical appliances that specifically capture gender and social differences in their consumption and use. Both appliances appeared on the British domestic consumer market during the early twentieth century but were not mass consumed items until the 1950s and beyond. Electric hairdryers were initially a luxury item. An article in the *Electrical Age* comparing the relative prices of electrical appliances in 1932, quoted electric hairdryers as being available on the market for between £1. 10s. 0d. and £3. 5s. 0d.⁵⁸⁰ This made it a comparatively expensive item, the cheapest being four times the cost of a cheap electric iron. In 1961 buying patterns had altered considerably. In an article for *The Financial Times*, by the Woman's Editor, it was recognised that the lower income groups were 'the new holders of mass purchasing power.'⁵⁸¹ In an analysis of buying patterns over the previous five years attached to the article it was stipulated that 13.2% of sales were among the upper classes, 27% within the middle classes and that 59.8% in the lowest income groups.⁵⁸² The use of electric hairdryers and accessories in the home allowed individuals to aspire to and emulate fashions without recourse to the hairdresser. Alongside a case study of the hairdryer I will explore the use of alternative spaces to the bathroom in health and beauty practices, such as the dressing table in the bedroom. I will argue that beauty practices were not confined to the space of the bathroom and bedroom and explore alternative locations within British homes.

The first electric or dry shaver was designed by American, Jacob Schick in 1928. Electric razors in Britain were initially only sold in small numbers, and sales were almost entirely composed of imported models.⁵⁸³ Any initial impact was lost during the war years but in 1949 sales of the electric shaver totalled 50 000.⁵⁸⁴ The output of electric razors for sale on the market reached 310 000 in 1953 against 63 000 in 1949 and it is estimated that 1 ½ million had been sold since the close of World War II.⁵⁸⁵ In 1950s Britain the shaving industry amounted to approximately £8 to £9 million a year. The number produced in Britain had risen to three quarters of total sales.⁵⁸⁶ As I will show later in this chapter, these statistics did not represent the whole picture as many men continued to prefer wet shaving. Female models of

⁵⁸⁰ Anon., (1932) 'Average price of electrical apparatus and running costs' In *The Electrical Age* 2(9): p357.

⁵⁸¹ 'Upgrading the Women's Magazines', *The Financial Times*, 3rd November 1961: p11.

⁵⁸² 'Upgrading the Women's Magazines', *The Financial Times*, 3rd November 1961: p11.

⁵⁸³ 'The Changing Face of Shaving', *The Financial Times*, 18th February 1959: p8.

⁵⁸⁴ 'Battle to attract 17m. U.K. Shavers', *The Times*, 27th July 1960: p14.

⁵⁸⁵ 'Competing for your Beard'. *The Financial Times*, 11th July 1953: p4.

⁵⁸⁶ 'The Changing Face of Shaving', *The Financial Times*, 18th February 1959: p8.

the electric razor were not introduced in America until 1940 and had only started to appear on the British market in 1960. As such electric razors provide an example of an electrical product that was marketed in a gender specific way in order to encourage consumption.

In the 1970s safety concerns over electricity in the bathroom and the use of electric razors led to the introduction of the shaver safety socket. However, as we shall see in the first section of this chapter the electrical nature of the 1950s bathroom was subject to some safety regulations.

6.1. The Bathroom and Electricity

The description of Joyce Barrass' unfortunate accident in 1952 gives but a few clues as to the character of the bathroom space in which it occurred. Below is an Image from a contemporary advert for *Ideal Standard Sanitary Appliances* in which a 1951 bathroom is depicted.

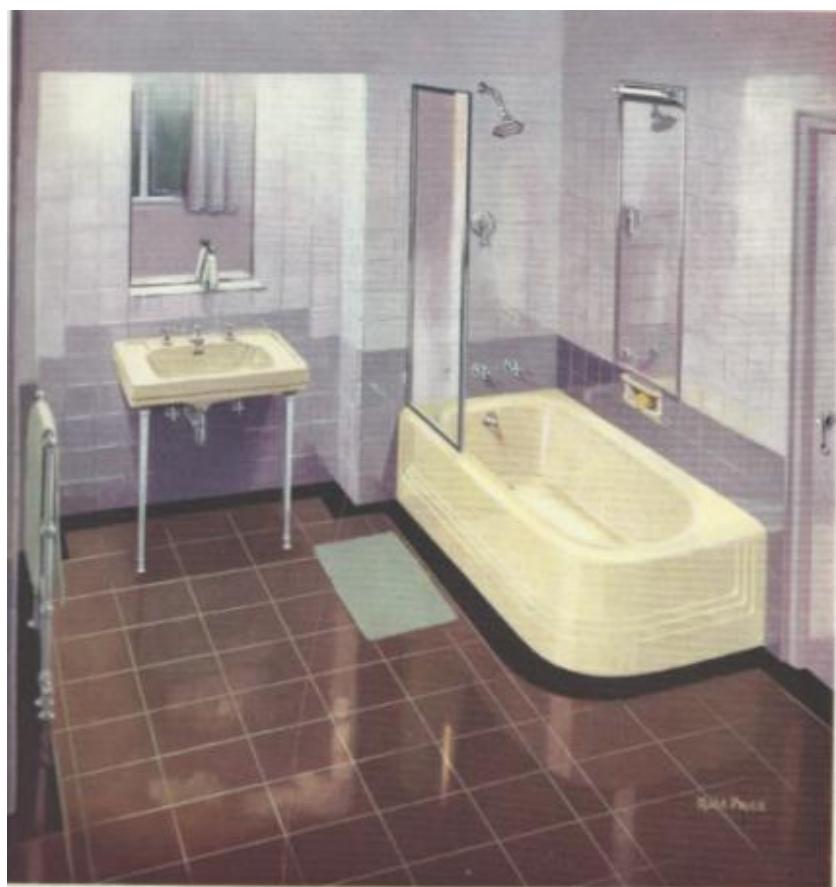


Image 6.2. Image from *Ideal Standard Sanitary Appliances* Advert, 1951.⁵⁸⁷

⁵⁸⁷ Ideal Sanitary, (1951) 'Advert' In Sherman, M., ed. (1951): p166.

Whilst this is an ideal designed to promote the modern and hygienic nature of the appliances advertised it also represents the tiled and enamelled aesthetic of the modern bathroom emerging throughout the first half of the twentieth Century.⁵⁸⁸ In this section I will present the history of the ‘modern bathroom’ and its emergence in the twentieth century as a dedicated space for personal hygiene and cleanliness, but I will also contrast this image with the use of pre-existing domestic spaces across all classes of society. The newspaper article reports the presence of both electric lighting and an electrical appliance, the towel rail, within the bathroom. I will show that the bathroom was characterised in part by its relationship with electricity, not only through concerns over electrical safety as described in the opening paragraphs of this Chapter, but also through the provision of electric heat, light and power supply.

The private bathroom first appeared as a dedicated space within the upper class house in the mid-eighteenth century.⁵⁸⁹ Historian Lawrence Wright identified the first evidence of a house advert with a bathroom to be in Paris in 1765. The British middle class house built before the turn of the twentieth century would have rarely had a purpose built bathroom. Baths would have been portable and placed in an alcove of the bedroom or in converted spare bedrooms. Wright describes how:

The standard London terrace house of the better class, built about the 1860s, had gone up in thousands on an almost invariable plan, with only two rooms of any importance on each of its four or five floors. It was meant for the growing prosperous middle or upper-middle class family, with at least one servant to toil up and down its extravagant stair-well at the call of a bell, carrying buckets of coal, cans of water and trays of food.⁵⁹⁰

The use of a bedroom to bathe in was acceptable whilst there was a servant responsible for filling and emptying the water. This would become impractical with the decline of the servant

⁵⁸⁸ According to Lawrence Wright the bathroom was aesthetically a room that in the nineteenth century would have been heavily dominated by thick wooden panelling and carpeting becomes at the turn of the century one that favours white enamel, tiles and marble. See Wright, L., (1960): p233. This was an aesthetic that matched the move towards the clean enamelled and laminated surfaces that came to characterise the ideal modern kitchen of the 1930s and onwards in Chapter 3. See also Stevenson, G., (2010): p29, in which the ideal 1930s bathroom is depicted representing a similar aesthetic; Forty, A., (2005): p117. Ruth Schwartz Cowan claims that this form of the modern bathroom was evolved into a standardised form within just over a decade from 1920, Schwartz Cowan, R., In Mackenzie, D. & Wajcman, J., eds. (1993): p185.

⁵⁸⁹ The bathroom is understood here as being a space containing a bathtub and usually a washbasin and toilet.

⁵⁹⁰ Wright, L., (1960): p258.

class following the First World War. At this time such residences were often converted into flats or boarding houses, in which available spaces were adapted into bathrooms, for example stair landings or below the entrance steps in basement flats. In contrast to the middle and upper classes at the turn of the century, the working classes had no such provision for a bathroom. The back-to-back slum housing built in the first half of the nineteenth century was built around courts containing a pump at one end and a privy at the other to be shared between approximately 20 dwellings.⁵⁹¹ They also would have had access to public bath and wash-houses, making the act of washing a very public activity for the working classes.

The bathroom as a space solely devoted to personal washing and grooming was a status symbol. New houses for the upper and middle classes were being built with designated bathrooms as opposed to converted bedrooms from as early as the 1880s in small numbers.⁵⁹² The Housing Act of 1923 introduced the requirement that a fixed bath in a ‘bathroom’ be incorporated into all new built houses.⁵⁹³ Greg Stevenson argues that as a new luxury for many people, the 1930s bathroom was designed to meet the contemporary concerns about efficiency and modern hygiene in the home.⁵⁹⁴ His statement is drawn from an advertisement for a modern bathroom by Harrods department store and whilst it closely resembles the tiled and enamelled depiction in Image 6.2 above, the implication is that this form of the bathroom remained a luxury for the upper classes.

The Electrical Association for Women (EAW) included the bathroom as a feature in all their recommendations and floor plans for new dwellings in the 1930s. The EAW sought to recommend not only electricity but efficiency and scientific management to the housewife in the organisation and running of the home, and saw the provision of a modern hygienic bathroom as part of this.⁵⁹⁵ Image 6.3. of a plan for the ‘Bachelor Girl’s All Electric Flat’ from 1931 and Image 6.4. of a plan of the EAW All-Electric House built in Bristol in 1935 both include provision for a bathroom. In the first (Image 6.3.), a recommended plan for a flat to accommodate the ‘bachelor girl’, originally drawn up for *The Architect and Building News* and reprinted in *The Electrical Age*, includes a private bathroom, alongside the kitchen, bedroom and living room as its spatial requirements. Image 6.4, a floor plan for the all-electric house built by the EAW to show how electricity could cater to all the needs of the housewife, includes the bathroom as a necessary feature (See No.14 on the plan). In the 1940s house it was advised by Central Housing Advisory Committee that the bathroom was to be placed on

⁵⁹¹ Wright, L., (1960): p144.

⁵⁹² Burnett, J., (1978): p215.

⁵⁹³ Burnett, J., (1978): p232.

⁵⁹⁴ Stevenson, G., (2010): p29.

⁵⁹⁵ See discussions of hygiene and cleanliness in chapters 3 and 4.

the first floor rather than ground floor in order to best use the space available and as this was considered the most convenient location for the user, particularly in times of illness.⁵⁹⁶ This was also the consequence of practical considerations in water supply as will be discussed below. There were, however, still many houses where the bathroom was not the norm, particularly among the working classes. Lily Collier who grew up in Lyme during the 1930s and 1940s explained, ‘Ours was an older house so we didn’t have a bathroom. I always wondered why some houses had bathrooms and others didn’t. We had a tin bath.’⁵⁹⁷ Older houses were lacking in the necessary infrastructure of piped water supply and drainage systems needed for the installation of an internal bathroom. The tin bath could be used anywhere in the home and remained in use throughout the 1930s and 1940s among the working classes. Mrs Veneer, who grew up in Winchester, described how, ‘you had a bath by the fire in the winter and out in the back yard in the summer.’⁵⁹⁸ Whilst the government and organisations such as the EAW promoted the provision of a bathroom in new built homes the majority of existing homes remained without a bathroom and washing practices surrounding the use of a portable tin bath continued in a variety of existing available spaces.

⁵⁹⁶ HMSO (1944) *Design of Dwellings: Report of the Design of Dwellings Sub-Committee of the Central Housing Advisory Committee Appointed by the Minister of Health and Report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing* (London): p15. See also Newman, D., (1935) ‘The E.A.W. House, Bristol’ In *The Electrical Age* 2(22).

⁵⁹⁷ Lily Collier (aged 14 in 1937) from Corporation Terrace in Lyme. Quoted in Greene, M. R. (2006).

⁵⁹⁸ Veneer, Oral History Interview, July 2010. See also accounts of tin baths in use among the working classes in Davey, D., (1980): p6; Harrison, R., (1975): p5. Oral History Interview in Roberts, E., (1984): p15; Forster, M., (1995): pp95-96.

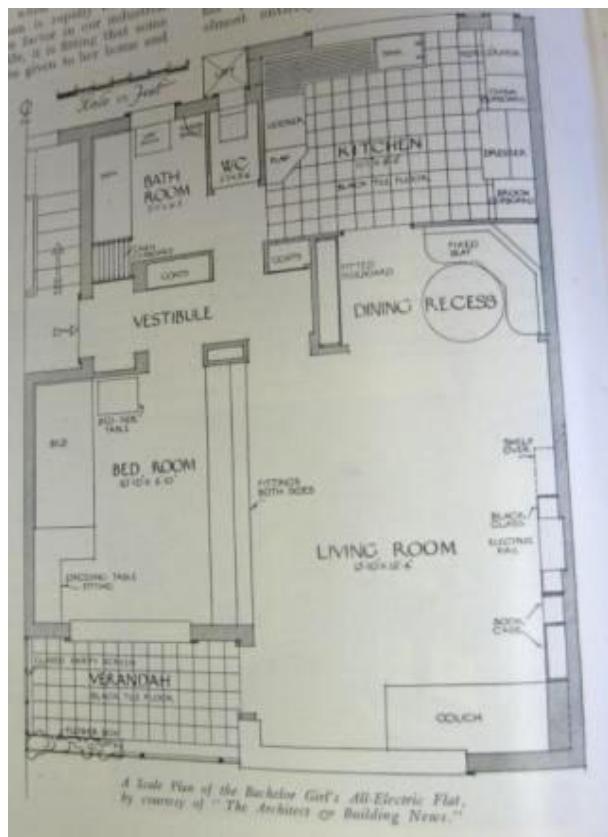


Image 6.3. 'A Scale Plan of the Bachelor Girl's All-Electric Flat', 1931.⁵⁹⁹

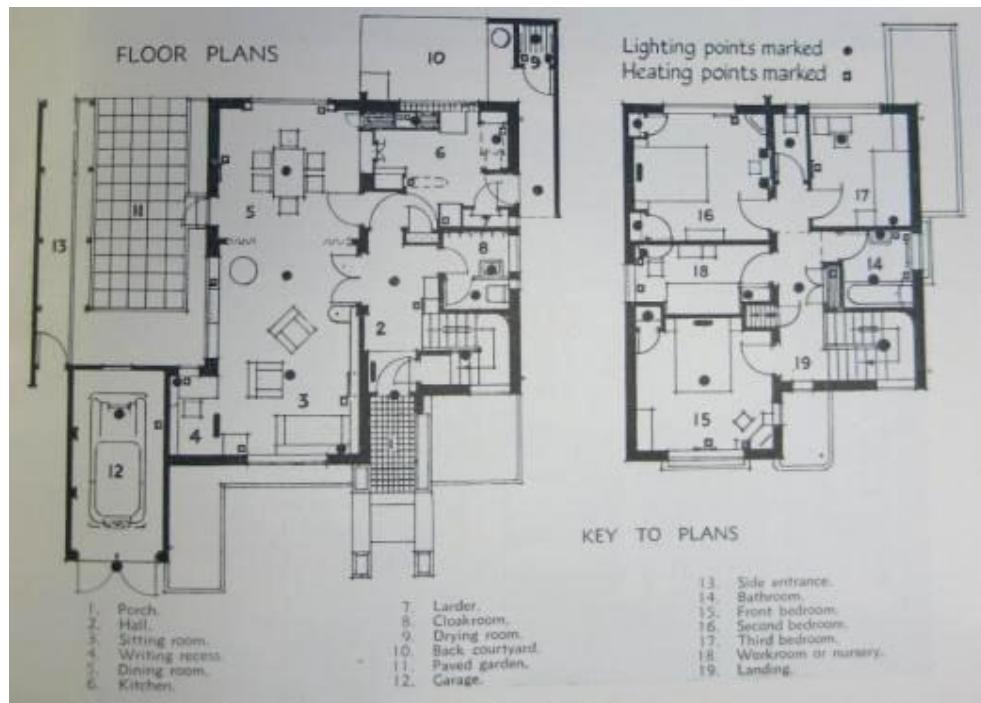


Image 6.4. Floor plans for the EAW All-Electric House, Bristol 1936.⁶⁰⁰

⁵⁹⁹ Anon., (1931) 'The Bachelor Girls Electrical Home' In *The Electrical Age* 2: p106.

⁶⁰⁰ EAW, (1936) 'The EAW House at Bristol' In *The Electrical Age* 3(1): p21.

During the 1940s, bathrooms started to become a more common feature of housing built for the working classes in response to governmental slum clearance schemes and post war reconstruction projects. The belief that the bathroom was an essential requirement for all classes had not been universally supported before the late 1940s. Christopher Nash, in an article for the Daily Mail Ideal Home Book in 1951-52, made the claim that, 'The jibe – not so very old – that if baths were provided in council homes the occupants would store coal in them, is to-day forgotten.'⁶⁰¹ This change in attitude is evidenced in the 1944 government report on the Design of Dwellings in response to housing shortages following the war, in which the provision of a bathroom for working class housing is recommended. The bathroom as a distinct room is, however, only mentioned specifically in relation to the design specifications for two storeyed, three bedrooned houses. It stipulates that the bathroom should be no smaller than 4ft. 9in. in width and that the bath ought to not be placed directly below a window to facilitate the opening and cleaning of the window.⁶⁰² In an Oral History Interview, Norman Townson, who was born in 1943 in a working class terraced street near Lancaster, described how in the 1950s he used the bathroom in his aunt's council house:

Later on my mum's older sister, me aunty, she got a council house which had a bathroom, and I used to be sent up there so I could get a bath weekly then... She had a hot tap in the kitchen and also in the bathroom of course...⁶⁰³

Despite the fact that his family remained without a bathroom, he had access to one through family connections. The recommendations of the 1944 report did not stipulate whether electricity or gas should be preferentially used to provide the piped hot water described by Norman Townson. Having explored the various and changing forms of the bathroom through the first half of the twentieth century the remainder of this section will focus on how electricity was incorporated into and impacted upon the bathroom as a space.

Electricity for heat and light

I opened this section by referring to the relationship between the bathroom as a space and electricity. Electricity provided a power source to heat hot water for use in the bathroom

⁶⁰¹ Nash, C., In Sherman, M., ed. (1951): p11.

⁶⁰² HMSO (1944) *Design of Dwellings: Report of the Design of Dwellings Sub-Committee of the Central Housing Advisory Committee Appointed by the Minister of Health and Report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing* (London): p37.

⁶⁰³ Townson, N., Oral History Interview, August 2010.

and to light the bathroom. Before the introduction of automatic hot water heating at the beginning of the twentieth century, methods for heating hot water historically included heated stones, pots and pans heated over a fire, the use of the copper, and a boiler built into the kitchen cooking range. In middle and upper class houses hot water heated upon the coal range would have been carried to the bath by maids, who would also have monitored the range to maintain a supply of hot water. Since the range would also have been used for cooking and so on this practice was economical but was gradually replaced by systems of pipes. It did however remain in use among working class households well into the twentieth century.⁶⁰⁴

There were three ways that water could be heated electrically, including the open outlet non-pressure water heater for local use, the electric pressure or cistern heater, and the immersion heater in hot-water storage tank.⁶⁰⁵ Electric hot water was marketed as cleaner and more constant than the alternatives of heating with an open fire or gas. In the 1920s a number of local electrical corporations began providing water heating systems, pioneered by the Croydon Corporation Electricity Department. A thermal storage water-heater was considered to be the most suitable for housing by the Croydon Corporation. This was because thermal storage water-heaters were always full of water and heated by a gentle heat with an automatic switch to keep water from boiling, making hot water available at all times.⁶⁰⁶ Commercially, Immersion heaters were most often marketed as a means of adapting existing systems to electricity. For the user it was important that any adaptations or alterations to existing heating systems met the requirements of providing enough hot water without removing the benefits of previous systems. A statement from a member of the Electrical Development Association (EDA) claimed that consumers were rarely dissatisfied with their electric water heaters unless the installation had not been adequate.⁶⁰⁷ He goes on to claim that:

A careful housewife is sometimes concerned lest the relationship of the heat in the tank by lagging should deprive her of warmth for airing linen, but no doubts need to be felt on this score, for it is a simple matter to arrange for an ample supply of heat to be given off by the tank.⁶⁰⁸

⁶⁰⁴ Wright, L., (1960): p188.

⁶⁰⁵ Anon., (1947) 'Electricity in the Home' In *The Electrical Age* 4(19): pp706-707.

⁶⁰⁶ Honey, P.C., (1930) 'Electric Water Heating.' In *The Electrical Age* 2: p128.

⁶⁰⁷ Bernard, J.I., (1934) 'Electric Hot Water' in *The Electrical Age* 2(17): p680. Bernard is a member of EDA.

⁶⁰⁸ Bernard, J.I., (1934) 'Electric Hot Water' in *The Electrical Age* 2(17): p680.

This shows that in adapting the home to use electricity, consideration needed to be given to the many household practices that were previously fulfilled by the kitchen range. The airing cupboard containing a water tank and hot water heater was one solution, and one which did not require the presence of an electric water heater in the bathroom itself.

As mentioned above the plans for housing with a first floor bathroom were influenced by a consideration of the practicalities of water supply. If the bathroom was fitted immediately over the scullery then ‘...when the water-heater is installed near the sink and securely fixed high up on the wall, a supply of hot water is only three feet or so away from all points of use,...’⁶⁰⁹ These were ideal relative locations that reduced the distance over which hot water had to be transported and thus lowered the risk of losing a large amount of the heat generated. Image 6.5. from an article in *The Electrical Age* in 1930 illustrates this possibility. Yet, it would not always be practical to place water heaters in this configuration within the bathroom for a number of reasons. As we have already seen bathrooms were often adapted into available spaces rather than purpose built and there was not necessarily adequate space to allow for the placing of a water heater inside the bathroom. This is also an ideal solution to efficient provision of hot water and evidence it was enacted is not readily available. In the 1935 plan for the EAW All-Electric House, in Image 4, the bathroom is located above a smaller cloakroom downstairs. The kitchen was located next to this cloakroom showing the close grouping of these rooms despite the fact they are not directly vertical in their relative locations. This example does not indicate the degree to which similar configurations were used in new housing for the masses.

⁶⁰⁹ Honey, P.C., (1930) ‘Electric Water Heating.’ In *The Electrical Age* 2: p130.



Image 6.5. Supply of Electrically Heated Hot Water to the Bathroom and the Kitchen.⁶¹⁰

By 1944 hot water was seen as a necessity for every new home. A report on the Design of Dwellings following the 1935 housing act recommended that 'arrangements for the supply of constant hot water to all fittings should be included in every house.' Whilst recognising that many homes still contained an open fire or range with a back boiler for hot water the committee noted that '...some other source of heat is needed in summer when the open fire is not in use. We call attention to the advantages of the installation of a small independent boiler.'⁶¹¹ They recommended either electric or gas means for heating water. As this suggests, gas water heating was also in use in many households. It was by no means a safer means of heating water due to the threat of gas leaks. A newspaper article in the *Daily Mirror* in 1958, reported the death of two young children in the bathroom as a consequence of fatal gas

⁶¹⁰ Honey, P.C., (1930) 'Electric Water Heating.' In *The Electrical Age* 2: p130.

⁶¹¹ HMSO (1944) *Design of Dwellings: Report of the Design of Dwellings Sub-Committee of the Central Housing Advisory Committee Appointed by the Minister of Health and Report of a study group of the Ministry of Town and Country Planning on site planning and layout in relation to housing* (London): p29.

fumes.⁶¹² Whilst electricity in the bathroom posed the risk of electrocution, the use of gas did not guarantee safety.

Electricity was also an important source of light within the bathroom. Electric light is not an attribute on which I wish to dwell here, as I will discuss it in more detail below in relation to the dressing table as an electrical space. As well as contributing to the nature of the physical space of the bathroom, the incorporation of electric power for heat and light had an impact on the way in which the bathroom was used as a space. American historians have drawn a link between an increasing preoccupation with appearance among middle class girls and the accessibility of the bathroom space with running hot water, mirrors and electric light etc, to facilitate personal care.⁶¹³ The American bathroom was thus a teenage space. The mass production of fashion images in adverts, magazines and in film is likely to have transferred such ideals to Britain and a desire to emulate the fashions and styles they represented within the home. Electrical appliances such as hairdryers and razors would have aided aspirations to emulate fashion.

Electrical appliances in the bathroom

The use of electric light sockets as outlets for electrical appliances following the spread of domestic electricity from 1927 meant that the presence of electric lighting also enabled the use of electrical appliances. In the 1952 article above (Image 6.1.) the electric towel rail was plugged into the electric light socket, and it was an inadequate connection that resulted in the rail becoming live. There were no regulations against the presence of outlets in the bathroom until the 1970s which is beyond the period of this study, however, the Institute of Electrical Engineers produced regular guide books to wiring regulations, that stated there should be no exposed metal parts that could become live, in appliances installed in a room containing a bath.⁶¹⁴

As part of their Electrical Outlet Campaign in 1928 the EAW recommended that the bathroom should be fitted with a minimum of two outlets to meet the needs of individual users.⁶¹⁵ The article also suggested that the appliances that might be in use in the bathroom were water heaters, electric fires and the towel rail. Electrically heated mirrors to prevent

⁶¹² 'The Bath of Death', *The Daily Mirror*, 3rd February 1958: p20.

⁶¹³ Brumberg, J.J., (1997).

⁶¹⁴ IEE., (1924) *Regulations for the Electrical Equipment of Buildings*, 8th Edition (London: Savoy Place); IEE., (1955) *Regulations for the Electrical Equipment of Buildings*, 13th Edition (London: Savoy Place).

⁶¹⁵ Anon., (1928) 'Electrical "Outlet" Campaign: Women's National Specification' in *The Electrical Age* 1(10): p383.

steaming up were also available on the market from as early as the 1920s. These electrical appliances would form a permanent part of the characteristics of the bathroom space. The ideal bathroom was characterized as an electrical space by the installation of electric lighting, the use of instant electric hot water and the installation of electrical appliances. Electric hairdryers and razors were portable appliances that could also be used in the bathroom space. It is these appliances that will form the basis for the rest of this chapter.

6.2. Health and Beauty in the Bedroom

Portable electrical appliances allowed the practices of personal care to be divided between the bathroom and other spaces within the home, for instance the bedroom. In this section I will describe the ideal dressing table space and the deployment of electrical hairdryers and curling tongs in the bedroom. I will consider both the marketing and use of these appliances in the home from the 1920s onwards, although as demonstrated in the opening to this chapter they were not consumed in large numbers until after World War II. Their use was, however, not limited to the bathroom and bedroom, as I shall demonstrate with examples in the following section of this chapter.

Electric sockets in the bathroom made it possible for electric hairdryers to be used in the bathroom space. In order to facilitate this Bakelite was used as insulation in the design of hairdryers from the late 1920s. An article in 1930 on useful hints for the homemaker in *The Electrical Age* by "Electra" pointedly advertises the use of the hairdryer in the bathroom:

The merits of the Electric Hair Dryer are too well recognised to require any praise in this column, but I would like to bring to the notice of our readers the hair dryer which is made of bakelite, an insulating material. As the whole case is thus insulated, it is claimed that the bakelite hair dryer may be used in the bathroom.⁶¹⁶

In this instance the use of bakelite to insulate the hairdryer made it much safer than the metallic models that were previously available. Despite the relative safety of using a bakelite encased hairdryer in the bathroom, its use was not necessarily confined to this space, but could extend to anywhere in the house as a consequence of the portability of electric hair dryers. For the moment I wish to focus on the dressing table within the bedroom as a space for personal health and beauty practices that existed

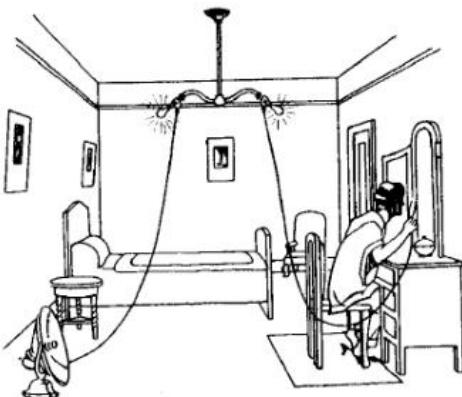
⁶¹⁶ Anon., (1930) 'Useful Hints' In *The Electrical Age* 1(15): p603.

alongside the emergence of the bathroom and was also characterised by its relationship with electricity where electric power was available.

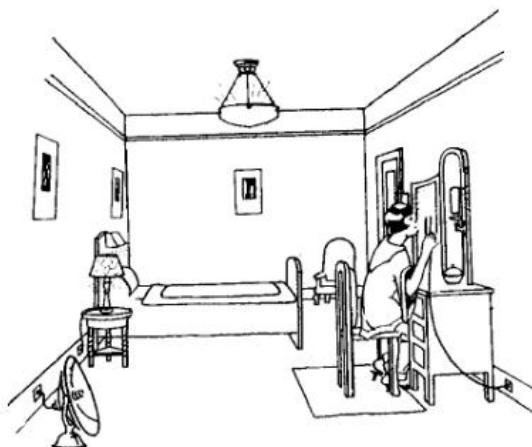
Depictions of the bedroom in advertisements and articles within *The Electrical Age*, popular magazines and Images from the Daily Mail Ideal Home Exhibition nearly always feature a dressing table space. They represent the ideal middle class home and consumer aspirations but establish that the dressing table was considered an important part of this. It was an alternative space to the bathroom, dedicated to personal presentation. A 1926 article in the *Manchester Guardian* claimed that, 'Round the dressing table especially there should be connecting plugs, so that it is possible to fix lights where they are needed and also to connect the various electrical toilet devices that are such a boon.'⁶¹⁷ This quote highlights the potential electrical nature of the dressing table space. In their 1928, electric outlets campaign the EAW drew attention to the adequate provision of power in the vicinity of the dressing table to facilitate dressing. They produced a diagram of the preferable arrangement of sockets that also illustrated how they would be used (See Image 6.6.). They aimed to both ensure that adequate outlets were provided in new housing and wiring installations and emphasised the improved safety of shortening flexes. The dressing table as shown here with a mirror and localised electric lighting is typical of depictions by the EAW. Image 6.7., shows the dressing table in the EAW All-Electric House in Bristol, built in 1935. Lighting was of particular importance in cupboards and around dressing tables and was a feature of the electric house that was highly praised, by its promoters. This image of the dressing table was also used by other promoters of electricity. Image 6.8., of a dressing table space in 1951, included in the Daily Mail Ideal Home Book, also depicts a mirror and places great importance on the lighting. It is accompanied by the statement that, 'Lighting for this dressing table provided by four shaded table lamps, aided by concealed tubular lighting behind pelmet and ceiling arch.'⁶¹⁸ It forms part of an article promoting the use of electric light in the home but the focus on the dressing table space as a significant area hints at the importance of adequate light in the beauty practices occurring there.

⁶¹⁷ 'Living in Luxury: The Electrified Bedroom', *Manchester Guardian*, 18th January 1926: p4.

⁶¹⁸ Freeth, R., In Sherman, M., ed. (1951): p149.



The risk of falling over innumerable flexes,
added to the annoyance of the light being
in the wrong position, makes dressing a
tiresome matter.



The joy of a bedroom fitted with a number
of "Outlets."

Image 6.6. EAW depiction of the ideal provision of electrical sockets in the bedroom.

Notice that the woman in this image is using an electrical appliance in her preparations.⁶¹⁹

⁶¹⁹ Anon., (1928) 'How Many "Outlets" Have You in Your Home?' In *The Electrical Age* 1(8): p289.

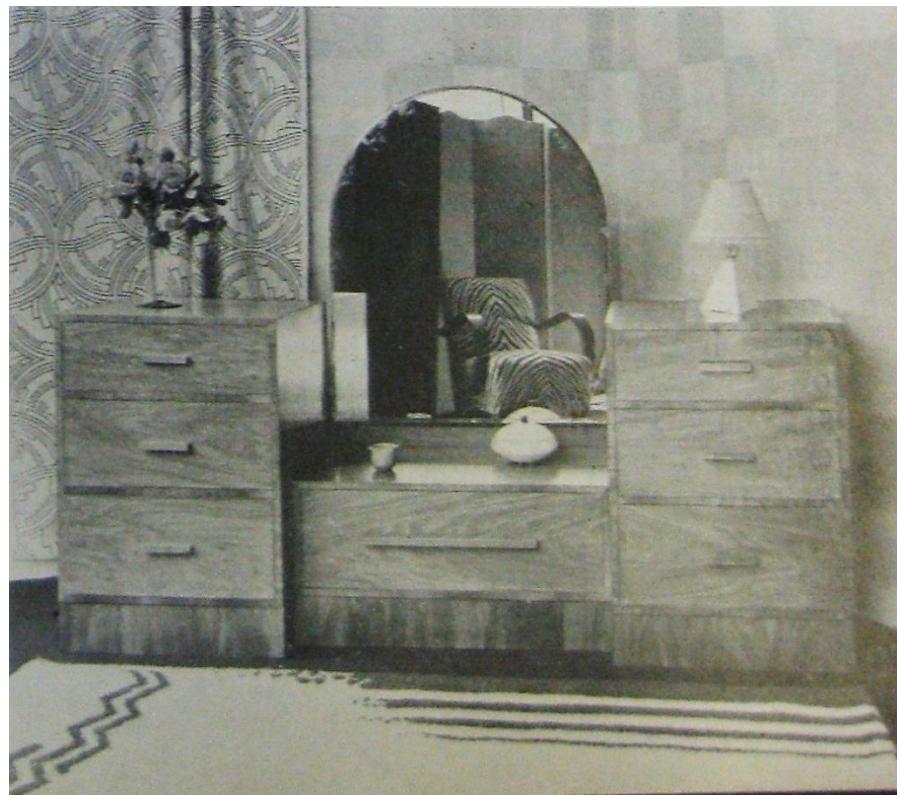


Image 6.7. Dressing Table from the EAW All-Electric House in Bristol, 1935.⁶²⁰

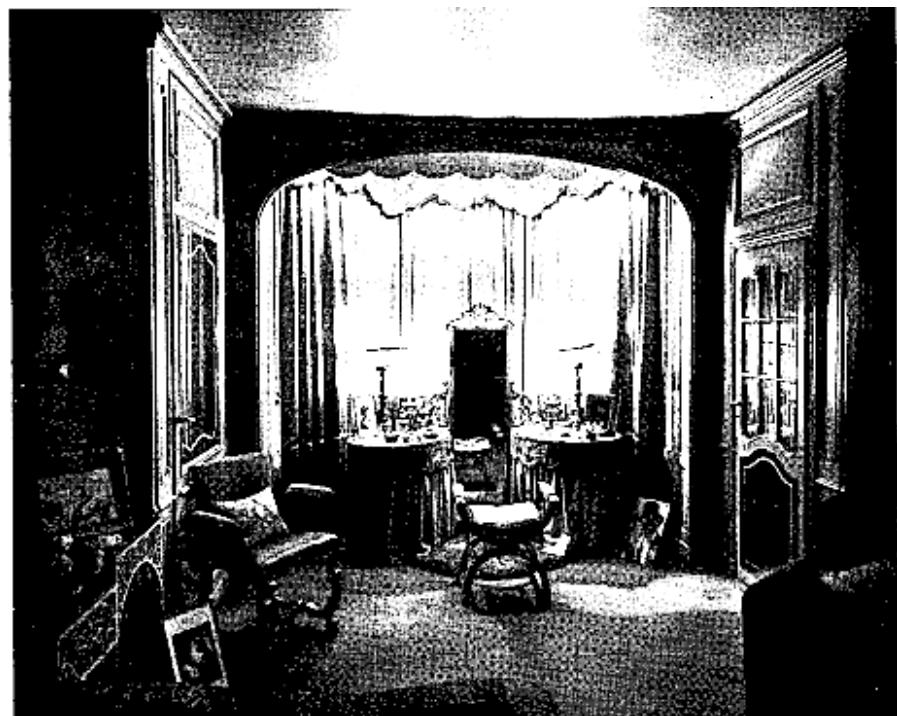


Image 6.8. Photograph depicting the use of lighting around a dressing table from the Daily Mail Ideal Home Book, 1951-52.⁶²¹

⁶²⁰ Newman, D., (1935) 'The E.A.W. House, Bristol' In *The Electrical Age* 2(22): p921.

⁶²¹ Freeth, R., In Sherman, M., ed. (1951): p149.

The depictions of the dressing table in Images 6.7 and 6.8 also give an indication as to the gendered nature of this space in the home. The curved shape of the mirror and presence of flowers in Image 6.7 and the plush fabrics and ornate decorations of Image 6.8 are both suggestive that this was a feminine space. Indeed it would have been predominantly used by women for the purposes of applying their make-up and arranging their hair. As I have already mentioned, these representations all relate to middle and upper class homes and their presence in working class homes should not be taken for granted.

Electric hairdryers and curling tongs were used by individuals to aspire to, and emulate, high society fashion that was increasingly present mass produced images. Joan Jacobs Brumberg in a study on adolescent girls in America noted how fashions in hair changed from the nineteenth to the early twentieth century:

Most girls grew their hair long so that it could be pulled on top of the head as a declaration of maturity, and they spent long hours with their mothers and sisters reading aloud, sewing, and talking while they dried and brushed their hair. These intimate, inter-generational grooming rituals – like the sewing and reading they accompanied – disappeared once the bob became the order of the day. Short hair did not require the same kind of labor, and it visually separated the young from the old.⁶²²

Changing fashions in hair style towards a differently maintained style in the 1920s. The history of consumption tells us that during the early decades of the twentieth century purchasing power was changing and style could be bought.⁶²³ This was facilitated by the consumption of magazines and film.

As with electrical razors, discussed below, and other small portable appliances, electric hairdryers were often marketed as the ideal gift. An article in the *Manchester Guardian* advertising the hairdryer claimed that:

The portable hair dryers, which are somewhat like a pistol in shape and are used by most hairdressers, can be bought for about 50s. These little machines are made of highly polished aluminium and will last for years. They fit on to any electric point, but care should be taken to state the voltage when buying so that one suitable may be obtained.⁶²⁴

⁶²² Brumberg, J.J., (1997): p 102.

⁶²³ Peiss, K., (1998): p4; 'Upgrading the Women's Magazines', *The Financial Times*, 3rd November 1961: p11.

⁶²⁴'Hair Dryers', *Manchester Guardian*, 14th January 1928: p10.

This shows that the hairdryer was marketed as cheap, efficient, and affordable to all. Consumers could now reproduce hair styles within their own home without recourse to the hairdresser. An article on equipment to help with present day needs in *Good Housekeeping* highlighted the significance of the hairdryer in allowing consumers to care for their hair at home, without numerous trips to the hairdresser:

Coming to more personal matters, visits to the hairdresser are often difficult to arrange when one is fully occupied during business hours or living in the depths of the country. So that, apart from the advantage of economy, many would find a small electric hairdryer a great boon, for it is equally suitable for drying hair after shampooing or setting.⁶²⁵

It adds that, ‘For a small extra charge the stand shown can be included, so that the task of holding the dryer is obviated.’ Showing how the consumers comfort was catered for.⁶²⁶ Another article on looking your best in *The Electrical Age* by J.L. Boudou of the Gallia Institute describes how permanent waving of the hair is important in summer to ensure hair is suitable for all occasions, ‘The electrical heaters used in gently steaming the hair to impart the wave can now be operated on a very low voltage – as low as 4 volts, which is a current equivalent to that of the pocket battery, and less than the current necessary to operate a child’s electric train.’ Voltage, and timing can also be controlled, ‘...minimum discomfort is incurred with maximum safety for the texture of the hair.’⁶²⁷ Use alongside other products to protect the hair was advised, e.g. brilliantine. Electrical appliances thus fall into a wider consumer market of cosmetics and beauty products. The electrical industry played on this, ‘In a nutshell, the care of both hair and skin rests with simple but constant treatments, and in this age electricity should be the faithful servant to be relied upon in the pursuit of modern beauty.’⁶²⁸ The representation of electrical modernity is in relation to electrical hairdryers and accessories is closely linked to aspiration, luxury and beauty.

An article in the *Manchester Guardian* from 1940 claimed that the hair dryer did not long remain a luxury item as:

...the fact that it reduced the drying time for a head of long hair from half an hour to ten minutes causing its use to become general. It eliminated treks from the bathroom

⁶²⁵ Anon., (1939) ‘Equipment to help with Present Day Needs’ In *Good Housekeeping*: p154.

⁶²⁶ Anon., (1939) ‘Equipment to help with Present Day Needs’ In *Good Housekeeping*: p154.

⁶²⁷ Anon., (1937) ‘Look Your Best’ in *The Electrical Age*, 3(7): p269.

⁶²⁸ Anon., (1937) ‘Look Your Best’ in *The Electrical Age*, 3(7): p271.

along cold passages to a fire “made up” half an hour earlier so as to be in a suitable state for drying the children’s hair, while the thrill of working the hot and cold switches amply compensated for the later bedtime necessitated by the older method.⁶²⁹

The article suggests that electric hairdryers became indispensable as a means of drying the hair and as a time saving appliance in order to promote their consumption as hairdryers were not widely consumed at the time, but became more so from the late 1940s onwards Dame Caroline Haslett considered the electric hairdryer to be among the most important toilet and comfort aids in her speech on electricity in the modern home at the British Electrical Power Convention in 1954.⁶³⁰ The quote above also alludes to earlier and continuing practices of drying the hair next to the fire, the subject of the next section in this chapter.

6.3. Elsewhere in the Home

In discussing the use of electric hairdryers I noted that as small portable appliances their use was not confined to the space of the bathroom. I described the bedroom space of the dressing table in which it could be accommodated but in fact the hairdryer could have been used anywhere in the home, within reach of an available power supply. For instance, the hairdryer might be used in the kitchen, a space that had formally been used for the practice of hair drying due to the presence of the kitchen range. This is demonstrated in the quote from Brumberg seen earlier in this chapter when describing nineteenth century care of hair.⁶³¹ As well as being flexible in the location of use, electric hairdryers could also be used for alternative purposes. In 1940 a number of these were identified for an article in the Manchester Guardian that included unfreezing taps during cold spells and softening butter when a meal was required at short notice or for drying the inside of wellingtons when they became wet.⁶³² The use of the electric hairdryer was flexible in terms of both purpose of use and domestic space in which it was used.

Some individuals chose to continue the practice of drying their hair by the open fire or in the warmth of the kitchen rather than using a hairdryer. In an Oral History Interview, Mrs Veneer who was born in the 1920s said of her youth, ‘We didn’t know there were such things...and if

⁶²⁹ ‘The Hair-dryer: other uses’, *Manchester Guardian*, 8th February 1940: p4.

⁶³⁰ IET Archives, NAEST 33/2.17, Haslett, C., (1954) *The British Electrical Power Convention: Electricity in the Modern Home*: p14.

⁶³¹ Brumberg, J.J., (1997): p 102.

⁶³² ‘The Hair-dryer: other uses’, *Manchester Guardian*, 8th February 1940: p4.

the towel didn't dry it properly then it was in front of the fire.⁶³³ Whether the persistence of drying the hair in front of the fire was due to the in-affordability of the hair-dryer or simply personal preference, it reinforces the variety of individual experiences in relation to the use of electrical appliances in British homes. The use of the kitchen as a space for drying hair further demonstrates how the nature of spaces might be altered by the activity which is taking place within it at a specific time. The use of the kitchen as a space for drying hair and indeed leisure alters its nature from the hygienic and efficient nature of the space when in use as a place of food production and preparation or washing. In the final section of this chapter I will return to the bathroom space and the use of electric razors.

6.4. Electric Razors

In this final section I will focus on a case study of the electric razor as an electrical appliance that could be associated with the bathroom and with health and beauty practices. Electrical razors provide an example of not only the gendered nature of health and beauty products and their marketing but also of an electrical appliance that had a mixed reception among male consumers.

As described in the Introduction to this chapter electric razors were first developed during the 1920s. They were designed to be a safe shaving technique to avoid the perils of using a blade, prior to the invention of the safety blade.⁶³⁴ In 1933 a small electric shaver of German manufacture was first advertised in Britain and in 1937 a Philips shaver with circular cutting head and Bakelite casing appeared.⁶³⁵ Wilkinson Sword, self-publicised as the foremost manufacturer of safety and straight razors in Britain, conducted research into the electrification of razors from the 1930s through to the 1960s and whilst they produced a number of patents, they never marketed any of these.⁶³⁶ Unlike in America where the Gillette safety razor dominated the market, in Britain the production of blades declined. In an article for *The Financial Times* this trend was attributed in part to competition from the electric razor. The article claimed that the 'manufacture of non-electric dry shavers was begun here around 1936, but, owing to the arrival of electric shavers shortly afterwards, they have never made any great headway.'⁶³⁷ Non-electric dry shavers may also have shown little success as a

⁶³³ Veneer, Oral History Interview, July 2010.

⁶³⁴ Von Oost, E. In Oudshoorn, N. & Pinch, T., Ed. (2003): p197.

⁶³⁵ Gordon, B., (1984).

⁶³⁶ Wilkinson Latham, R., (2004): p176.

⁶³⁷ 'Competing for your Beard', *The Financial Times*, 11th July 1953: p4.

consequence of the persistence of safety razors and the practice of wet shaving which they were designed to replace.

In an article surveying the state of the shaving industry in 1959, entitled 'The changing face of shaving', within *The Financial Times* it was claimed that most of the early advertising was directed at promoting the idea of dry shaving. Competition between different brands only became apparent in the two or three years preceding the article.⁶³⁸ Adverts emphasised speed closeness, comfort and convenience in contrast to the promises of freshness and cleanliness associated with the wet shave. Phillips employed a novel marketing technique that promoted the 'modern' nature of their electric shavers. They provided airlines with battery powered shavers that had the company's logo imprinted on them, generating a link with the modern airplane, and ensuring middle and upper class male travellers were exposed to their product.⁶³⁹ Manufacturers disagreed on the market for their products accepting that sales were initially made to the professional and business classes but that they had a broad appeal across all social strata, although predominately to men aged below 45 years.⁶⁴⁰

In the advertising for electric razors, men were not the only consumers targeted by manufacturers. The purchase of electric razors as gifts was an instance in which the consumer did not necessarily equate to the user and alternative marketing was used. In 1938 Ever Ready advertised their new electric shaver as the ideal Christmas gift in *The Financial Times*. The advert was careful to highlight the company's long running experience of 36 years in the manufacture of razors to promote their product.⁶⁴¹ An article entitled 'Competing for your beard' in *The Financial Times* claimed that the majority of advertising and sales for electric razors was found to be concentrated around the Christmas period, emphasising that a number of razors were given as gifts.⁶⁴² Adverts appeared in a number of women's magazines and many manufacturers, such as Ronson, specifically targeted them as part of a Christmas campaign.⁶⁴³ Purchases by women of these products as Christmas presents reportedly formed a third of all sales figures. Women were thus considered to be 'instrumental in their menfolk changing from wet to dry shaving'.⁶⁴⁴ The numbers of electric razors bought as gifts does not necessarily directly correlate with how many were actually used upon receipt.

Electric Razors were also marketed to women. Changes in fashion during the first decades of the twentieth century had an impact on female beauty practices. The corseted and

⁶³⁸ 'The Changing Face of Shaving', *The Financial Times*, 18th February 1959: p8.

⁶³⁹ Von Oost, E., In Oudshoorn, N. & Pinch, T., ed. (2003): p199.

⁶⁴⁰ 'The Changing Face of Shaving', *The Financial Times*, 18th February 1959: p8.

⁶⁴¹ 'Ever-Ready', *Financial Times*, 6th December 1938: p12.

⁶⁴² 'The Changing Face of Shaving', *The Financial Times*, 18th February 1959: p8.

⁶⁴³ 'Advertising News', *Financial Times*, 10th September 1959: p13.

⁶⁴⁴ 'Battle to attract 17m. U.K. Shavers', *The Times*, 27th July 1960: p14.

gowned female figures that could be seen at the turn of the century had by the 1920s moved to less restrictive and looser fitting smock dresses. There was a degree of exhibitionism in the definition of modern femininity.⁶⁴⁵ More of the body was now on display and perceptions of the female body required that legs and underarms be smooth and hairless.⁶⁴⁶ The manufacturing company Phillips recognised that women were using razors and in the manual accompanying their 1939 electric shaver they included a large section specifically aimed at women. The first electric shaver for women was not made until 1940 in America.⁶⁴⁷ Phillips produced the ‘Beautiphil’ in 1950 for women only. It was similar to the male model but used pink plastic for the casing and was packaged in a more feminine case.⁶⁴⁸ In Britain, ladies models of the electric razor were only beginning to be placed on the domestic market in 1960, having proved a success in America.⁶⁴⁹ The design features of the ladies electric razor were by this time beginning to relate more specifically to their female users. To this end the technology within the machine was gradually concealed and a more feminine shape adopted.⁶⁵⁰ As Ellen van Oost notes in her article on electric shavers and gender the use and domestication of a technology enables the processes of shaping and re-shaping in relation to both gender and the technology.⁶⁵¹ The use of razors by women led to alterations in their design and also enhanced the image of the smooth skinned and hairless female.

Whilst the consumption of electric razors had increased since their introduction to the domestic market consumer experiences of electric shavers varied. In the following accounts I have focused on male experiences of electric razors in the 1940s and 1950s since ladies electrical razors were more of a novelty prior to 1960. In a letter dated 1955, A. G. Wills advocated the use of the electric shaver, which he had purchased in the 1930s and used for 20 years: ‘Hot water and all the other expensive necessities of the “scrape-shave” have, therefore, been completely unnecessary for 20 years, thanks to the excellent, safe and much more comfortable “mower” shave that is given by a good electric shaver.’⁶⁵² Not all electric shavers were found to be satisfactory. Mr Reginald Richmond of Liverpool having received an American razor as a present from a friend in 1944 found that its grooved face produced much more satisfactory results than the British made hole or slot razors used by his friends.⁶⁵³ He did

⁶⁴⁵ Brumberg, J.J., (1997).

⁶⁴⁶ Brumberg, J.J., (1997): p98; Von Oost, E. In Oudshoorn, N. & Pinch, T., eds. (2003): p200.

⁶⁴⁷ Boxshall, J., (1997): p54.

⁶⁴⁸ Von Oost, E., In Oudshoorn, N. & Pinch, T., eds. (2003): p200.

⁶⁴⁹ ‘Battle to attract 17m. U.K. Shavers’, *The Times*, 27th July 1960: p14.

⁶⁵⁰ Von Oost, E., In Oudshoorn, N. & Pinch, T., eds. (2003): p200.

⁶⁵¹ Von Oost, E., In Oudshoorn, N. & Pinch, T., eds. (2003): p200.

⁶⁵² ‘Letter on Choice of Razors’, *The Financial Times*, 6th January 1955: p6.

⁶⁵³ ‘Letter on Dry Shavers’, *Financial Times*, 20th April 1960: p10.

however claim to have found and used an unidentified British model that produced comparably adequate results.

As well as a variation in the experience of electric razors, there is also much evidence that some men preferred the traditional wet shave. A. G. H. Morrell wrote into the editor of *The Financial Times* to share the information that his electric razor, received the year before for Christmas, was less efficient than a wet shave, ‘...after using it for several weeks I have reverted to my old safety razor. The electric razor certainly saved time but after using it I felt as if I had shaved 12 hours earlier.’⁶⁵⁴ Similarly a gentleman writing to the editor of *The Financial Times* in 1957 and signing himself ‘Old Contemptible’ stated that:

An electric razor – present in 1939 – has been little used, as I agree with the 12-hours-old feeling it gives. The open blade razor properly used, with skin stretched with fingers, can cut actually below the skin’s normal surface.⁶⁵⁵

All of these accounts come from readers of *The Financial Times*, a couple of whom were referring to the 1930s. It might be assumed that the younger generation were more open to new technologies and methods however this is not the picture portrayed by a couple of oral history interviewees who grew up during the 1940s and 1950s. In an oral history interview Sheila Ball claimed that her, ‘husband never liked an electric razor, he always had an ordinary razor.’⁶⁵⁶ A final example of a user who preferred wet shaving to the electric razor was Norman Townson, who described in an oral history interview how:

When I was about 18 or 19, when I went away for the first time, I don’t know, perhaps me mum and dad bought it for me. I think they bought me a razor so that would’ve been, that’d be 1961, so yeah we didn’t have an electric razor until then, and that was mine. A Phillip shave with the two rotary heads, I used it for a few years but it was never that effective and eventually went back to wet shaving, which I have done ever since.⁶⁵⁷

He further added how those who persisted in using the electric razors often encountered problems with the flex:

⁶⁵⁴ ‘Letter on Shaving’, *Financial Times*, 27th April 1959: p4.

⁶⁵⁵ ‘Letter’, *Financial Times*, 6th May 1957: p8.

⁶⁵⁶ Ball, S., Oral History Interview, August 2010.

⁶⁵⁷ Townson, N., Oral History Interview, August 2010.

One or two people up the street in the fifties must have got electric razors at various times, and they didn't take a lot of power so the flex to them was fairly thin and I suppose with people using them around the face, moving the razor around quite a lot, the cable to them, used to get flexed too much perhaps at the same point and the wires inside the flex used to break. I remember once or twice my dad having to repair people's cables to the electric razor.⁶⁵⁸

In 1960 wet shaving equipment was no longer losing ground in sales statistics, suggesting that a market for both wet and dry methods would remain for the immediate future.

The description of the problem of flexes in Norman Townson's account above returns us to the question of how electric razors interacted with the bathroom and in fact alternative domestic spaces. Wet shaving would most conveniently be located near a sink, whilst dry shaving with an electric razor was not by necessity confined to the bathroom assuming that a mirror was accessible. Despite this electric sockets were available within the bathroom for the use of electric razors. This again returns us to the safety concerns outlined in the introduction of using electricity in proximity to water in the bathroom and how the use of electrical appliances alongside electric heat and light transformed the nature of the modern middle class bathroom of the 1950s to become an electrical space used for health and beauty regimens in the home.

6.5. Conclusion

A number of conclusions can be drawn from the material in this chapter about consumption practices. Firstly, the increasing consumption and use of electrical appliances in health and beauty routines can be linked to increasing home based consumption and a move towards the private production in the home of a public and performative personal appearance. The argument that cleanliness in the home was an important indication of the moral nature of the household, discussed in Chapter 3, can be further applied to personal cleanliness and appearance as an important outwards presentation of the respectability of the individual. Secondly, electrical health and beauty products were marketed in a gender specific way in order to encourage consumption, and the spaces in which they were used became gendered as a consequence of the activity occurring within them. Electric razors for women were specifically designed and packaged in a way that was expected to appeal to female consumers. Thirdly, electric razors and hairdryers assisted individuals in the aspiration to higher class

⁶⁵⁸ Townson, N., Oral History Interview, August 2010.

values and fashions both through ownership and use. They were presented within an ideal construction of modernity that emphasised affordable fashion and played to social aspirations. In addition it is notable that electricity and electrical appliances are intimately intertwined with other technological systems, such as water supply, and with social networks that determine what is acceptable as regards practice, personal care, and presentation. Fourthly, spaces in which electrical appliances were used became in part characterised by their electrical nature as well as the type of activity occurring within them. Both the ideal space of the bathroom and reconstructions of the ideal dressing table space, include electric lighting and conveniently located sockets to aid personal care. Finally the influence of individual preferences and choices on the nature and use of different spaces and variety of experiences cannot be underestimated. In the bathroom, its potentially electrical nature contributed to concerns over electrical safety.

Chapter 7

Conclusion

In 1960 household appliances had largely stabilised on the consumer market and were no longer experiencing peaks of high demand but the process of consumption leading up to this point was disjointed and inconsistent. Within the framework of electrical development in Britain, this thesis addresses how electrical technologies were constructed as necessities for different ideals of modern life at different points in time in order to promote consumption. The focus on electrical development in America and on the continent in the existing body of historical literature led to a focus on the consumption of electricity in a British context. Whilst my understanding of electrical technologies has been informed by social constructivist studies that recognise the social influences and tensions that shape and are shaped by technological development, such an approach has proved impractical to exploring the consumption of electrical technologies in Britain. The huge variety of electrical appliances and range of models available preclude an in-depth study of each within the scope of this thesis. In addition there is a scarcity of industrial archives to support an investigation into the social influences on design and changing design features linked to consumption. Instead I have taken a spatial approach to the consumption of electrical appliances within the domestic environment to show how they interacted with and co-constructed the electrical nature of different spaces within the home, and to emphasise the variety of different experiences of electricity and modernity among British consumers. In addition whilst this thesis accepts the conclusions of Ruth Schwartz Cowan's work on domestic technology in America, the adoption of an interdisciplinary approach and a focus on spatiality extends the analysis of domestic electrical technologies in Britain to consider the specific location and use of electrical technologies. Unlike material culture studies which often consider the history of an object in isolation, the purpose of this thesis was to relocate technologies in the physical and social context of use. In this final chapter I will provide an overview of my general findings with regards to the use of electrical technologies in domestic spaces and to further highlight the tensions in characterisations of the ideal modern home and its relationship with electricity and the realities of everyday use and variety of different experiences across British society. I will also suggest some areas for further research that have arisen as a product of my research before offering some final remarks.

In 1954 in a speech at the sixth annual British Electrical Power Convention, Dame Caroline Haslett listed the economic factors that had promoted domestic electrical development since 1927 as lifted restrictions on production, new houses, reduced purchase tax and increased electrical supply at cheap prices. Further to this she listed significant social changes that had also contributed; widespread distribution of wealth, the reduced number of domestic servants, greater number of women directly involved in running the home, and improved transport and communication across the country.⁶⁵⁹ Caroline Haslett was president of the Electrical Association for Women (EAW) and had been heavily involved in the Women's Electrical Society (WES) throughout the period of the construction of the national grid and was in a good position to judge the progress of electrification in Britain. Her statement summarises the social, economic and technical factors that had assisted the nationalisation of electricity supply and its adoption as a domestic power source. Against this background consumption of electricity had increased so that 86% of British homes were wired in 1951, and continued to do so, reaching 96% in 1961. Domestic electrical appliances thus formed part of a wider technological system of electricity supply in the home. Electric power was represented as efficient and economical in competition with gas supply, but domestic consumption of electric power was disjointed and incremental. There remained large regional and social variations in supply and consumption as a consequence of the technical, economic, political and social factors that influenced the direction of the development of the national grid. The disparate nature of the nascent electricity supply industry made up of private and municipal undertakings had repercussions for regional variations in voltage, current and frequency of electricity supplies. This impacted on the early consumption of electrical appliances. Advertisements in the 1920s included details of voltage and current so that consumers could make informed decisions about appliances that were compatible with their local supply. It also created later problems for standardisation, which was not fully implemented until the 1950s.

Electrical technologies were presented to consumers within constructed contexts of the ideal modern home in adverts, shop displays, and exhibitions. Such displays carried subsumed messages about modernity and the place of electrical consumer products in the home – their role, social status and desirability. They implied that by buying specific electrical products, consumers were also buying the ideal modern home in which it was represented and consuming the notions of modernity that it embodied. The ideal modern home incorporated a series of spaces characterised by their relationship with electricity. This was a consequence of the use of electric lighting, the provision of electric power, and the presence and use of

⁶⁵⁹ IET Archives, NAEST 33/2.17, Haslett, C., (1954) *The British Electrical Power Convention: Electricity in the Modern Home*: p2.

electrical technologies that interacted with the organisation and interior décor of British homes. Electrical modernity spread from the provision of electric lighting in the whole house and the use of appliances that attached to the light socket to centre on constructions of the ideal kitchen in the 1930s and then spread back out to encompass the entire house and household as modern domesticity altered to incorporate the constructions of the home as a centre of leisure. Yet this was a fragmented and incremental process that varied under different personal circumstances and across individual British homes. There was a huge diversity in the form, structure and the electrical nature of homes both regionally and socially. Few could afford to buy custom built modern homes that drew upon the principles of modernist architecture; they remained the luxury of the elite. Similar principles of open plan spaces and natural lines were employed to varying degrees in municipal housing as part of slum clearance schemes. The variation in British housing ranged from back-to-back terraces and open plan council housing to high-rise modern flats and 1930s middle class suburban homes, among other forms. Constructions of the ideal home were for the majority of the population a form of escapism and aspiration. The gas industry also sought to promote their appliances within a similar aesthetic of the modern home. Kensal House in Kensington is an example of modern flats built as part of slum clearance schemes that were entirely powered by gas as opposed to electricity. Electricity was being introduced and incorporated into domestic environments that exhibited various degrees of modernity in competition with the gas industry.

The messages about modernity that were conveyed varied between different appliances, and like the notion of modernity itself were fragmented and inconsistent.⁶⁶⁰ Advertising presented individual appliances within specific constructions of domestic modernity that would make them most appealing to the consumer at a specific time. In Chapter 3, I showed that electric irons and vacuum cleaners were linked to cleanliness as an important attribute of the modern home. This emphasis was mirrored in advertising for electric cookers to promote electricity in competition with gas, as shown in Chapter 4. Advertising for electric refrigerators in the 1930s drew on notions of 'hygienic modernity' in addition to cleanliness order to present refrigerators as a necessity for the preservation of the health and welfare of the family. These appliances were streamlined in the 1930s to become commensurate with the aesthetics of the modern home, and specifically the ideal modern kitchen in which they were represented. In Chapter 5, constructions of home and family centred leisure as central to modern domesticity promoted the consumption of electrical

⁶⁶⁰ As discussed in Chapter 1, p11.

appliances associated with leisure as opposed to housework. In the 1950s representations of fashion and that ability of electrical appliances to aid emulation of these ideals in the home were used to promote electricity in the maintenance of personal appearance. Ideal constructions of modernity evolved between 1927 and 1960, shifting from an emphasis on cleanliness and efficiency to focusing on hygiene and the role of the housewife, before moving away from appliances towards technologies directed at leisure, luxury and technocracy. By 1960 when appliances had stabilised on the mass market it was novelties and luxuries that experienced rapid peaks in demand in the mass consumer society that had emerged across the first half of the twentieth century.

Studying the consumption of electrical appliances within constructions of the ideal modern home and in individual homes across Britain, provides a way of studying and demonstrating the fluid and dynamic nature of domestic space as it was re-shaped to accommodate electricity. Electrical technologies and the specific space in which they were consumed mutually constructed and transformed each other. The meanings of space altered to accommodate the activity that was taking place within it and determined how the activity was performed and the social meanings that were constructed around it. One example from my thesis is how the scientifically managed and efficient space of the modern kitchen designed for food preparation was transformed into a different space by the storage and use of the ironing board demonstrated in the EAW House at Bristol. In this instance the use of the ironing board precluded movement around the kitchen to cook and prevented access to the refrigerator. Another example is the reconfiguration of ideal domestic spaces to incorporate the bathroom and the dual use of the bathroom space for personal hygiene and for washing clothes. The washing of lingerie and drying of washing over the bath in some middle class households and the use of the bath to wash were mutually exclusive activities that occurred within the same space. A final example is the accommodation of different spaces in the home by children to play with electrical toys, discussed in Chapter 5. The meanings of domestic spaces were linked to the activities occurring within them and altered alongside changing practices as electrification occurred.

The consumption and use of electrical appliances in any home was subject to limitations. It was governed by the availability and location of power sockets, and the length of flex that was provided. Appliances had to be located within access to a power supply. Some consumers overcame these problems by extending the flex themselves at home, as seen in oral histories about the use of vacuum cleaners in Chapter 4. Safety was another problematic aspect of the use of electricity, since consumers were concerned about issues of safety. The

electrical industry employed tactics to make electricity appear fitting in the home by personifying electricity as a helpful aid and friend to the housewife, however, there were continuing concerns about safety particularly in relation to electrical toys and the use of electricity in bathrooms, as seen in chapters 5 and 6.

There were significant class differences in the consumption and use of electricity and electrical appliances in Britain during the first half of the twentieth century. The availability of source material generates a very middle class story about the consumption of electricity but with the aid of autobiographies and oral history testimonies I have begun to unpick the class differences that existed in Britain. In 1927 when the national grid was being implemented the majority of electrical appliances were bought by the upper classes for use by their servants. As the servant problem emerged and quality servants became harder to come by middle class housewives adopted electrical appliances as a labour saving means of preserving their social status without the aid of servants. Large electrical appliances were consumed as status symbols, for instance refrigerator was a large bulky streamlined technology, originally a status symbol but became a necessity across the population. Electric irons, vacuum cleaners and radios were affordable portable appliances that were commonly found across all classes by 1960 whilst larger technologies and niche luxury items were still associated with the elites. Marked class differences in the consumption of electrical appliances in the 1920s were however diminishing with the phenomenon of mass consumption of the 1950s

In addition to class differences there were also variations in the gendered nature of different electrical spaces in the domestic environment. The kitchen is recognised by historians as a specifically gendered space and often proffered as a site of female subjection. Women were certainly targeted as subject of advertising for electrical appliances in the kitchen and as responsible for the health and welfare of the family, but the drudgery of housework was relieved by the introduction of electrical appliances and the housewife had a degree of power in the home through her role as the principal domestic consumer. Increasing male participation in the home as a consequence of unemployment in the 1930s and suburbanisation in the 1940s and 1950s, in Chapter 5, had repercussions for the creation of specifically masculine spaces in the home, such as the garden shed. It is however, apparent in advertising for electrical appliances across the period under study that the housewife consumer was identified and constructed as the primary user of electrical technologies in the home. She was constructed and represented as a well-dressed housewife responsible for housework and the care of the home and household. The main exception was with adverts produced and released prior to the construction of the grid in which servants were depicted

using appliances reflecting the fact that electricity was not available to the masses at this time and predominantly a power source of the elite. However, there are also many other consumers of domestic electricity including children helping with housework, such as boys doing the vacuuming, and playing with electrical toys and radios. Also men alongside women consumed electrical razors, radios, gramophones and electrical tools. The notion of the 'housewife consumer' is too narrow and masks the disparate identities, status and ethos of individual housewives as consumers and the huge variety of other individuals who partook in the consumption of electricity and electrical appliances.

As I have reaffirmed across the thesis, the study of electrical appliances reinforces **will mine?** Ruth Schwartz Cowan's argument about the ironic creation of more work for the housewife in America. Electrical appliances did relieve the drudgery of housework but were not necessarily also time-saving. Electric irons, discussed in chapter 3, were lighter and cleaner making them less tiresome to use. Another example not discussed in this thesis but that reinforces the labour saving of electrical appliances and their limitations are electric washing machines. The following two quotes about the practice of washing clothes in working class homes without and with an electric washing machine illustrate the difference electricity made to the process of laundry. In the small terraced home of an oral history participant in Elizabeth Robert's study of middle class housewives during the 1920s, Mrs Mitchell's laundry was done:

...in the back kitchen, not the living-room, where all the cooking and everything was,...now just higher up this was made of brick, in the middle there was a grid inside and you used to take the coal off the living-room fire and put it in their first thing Monday morning to get that fire going...and then you had to fill this boiler from the cold water tap at the sink. We used to have what we called a lading can, a tin one, a huge cup with a big handle and filled it at the tap, pour it in this boiler till this big iron boiler inside was full of water, and then you waited till that got hot, then they put all the clothes in after they were steeped in water all night. They were put in and they were all boiled in there. They would boil for so long, and then it all came out and there was two big wooden tubs, like there beer barrels, and they would come out of this boiler and they would go in this butt of water to rinse. Then they would have a good rinse ad be taken out of there, put through an old-fashioned wringer. It was solid, you had to drag them out, you couldn't move them, made of solid iron with huge wooden rollers...Now in this other tub, it was cold water and a dolly blue dipped in it to make it blue...Then she'd get a dish where she would mix some Reckitt's starch, and she would mix it up, and it was all poured into this big tub, all mixed up, and all these clothes were put back into there. That was to put the final stiffness, the starch and the blue to

whiten them. Then they were taken out and they were put back through these rollers, the old mangles, they were called then, and as they came through there, they were all folded neatly and all put outside to dry.⁶⁶¹

Laundry was a lengthy and labour intensive process. A similar story was told by Elizabeth Allen, a middle class housewife of the EAW, about how washing was soaked overnight on a Sunday, washed on a Monday and hung on an airier overnight to dry in order to be ironed on a Tuesday. It should be noted that if they didn't send their laundry out to commercial laundries, middle class housewives would have had some form of help, whether it be from a live-in domestic servant or a daily charwoman. In contrast to the experience of Mrs Mitchell above, the introduction of the electric washing machine at the end of the decade altered the task of washing as this quote illustrates:

...whilst breakfast is being prepared, she merely switches on her electric wash-boiler, to have in readiness a plentiful supply of hot water to commence washing as soon as the meal is finished. The clothes are sorted out into their various grades, and at touch of the switch, "hey presto" the Electric Washer – the efficient and obedient servant – commences its duties, whilst the housewife again carries on with other household tasks, preparing the dinner, etc. Anything and everything from My lady's finest linens and delicate laundry, King Baby's woollies, Sonny's flannel pants, his Sister's tennis frocks, to the Workman's overalls, soaked in dirt and oil, may be successfully washed in the Electric Washer. Blankets, curtains and settee covers also can be laundered with perfect satisfaction.⁶⁶²

Although the quote refers to a working class home it is worth noting quickly that statistics show that even by 1948 just 2% of working class homes owned a washing machine and that the majority were found in upper working class homes. Unlike the previous quote this comes from an article that was written for an EAW publication, whose primary purposes included promoting the widespread use of electricity. This is a problem when comparing these accounts but shows that the industry aimed to offer an escape from drudgery. The promise of an easier, more efficient and cheaper washday with electricity is common in articles and advertising within popular magazines. These sources mask the fact that the housewife would still be required to fill and empty water from the machine, to transfer large volumes of washing into

⁶⁶¹ Roberts, E., (1984): p127.

⁶⁶² Hutchinson, M. M., (1935) 'The Modern Washday in a Working Home' In *The Electrical Age* 1(20): p851.

and out of the tub, and to supervise the wringing. Early use of electric washing machines therefore remained more labour intensive than is suggested in this account. The washing machine is just one electrical case study that I have not been able to include in the thesis but that offer interesting areas for further research.

Cynthia Cockburn and Susan Ormrod's work highlights a new domestic technology that was only just becoming available for domestic consumption, the microwave.⁶⁶³ Their study focuses on the design of the microwave by men, and testing by home economists but it would be interesting to extend this to a focus on how it was consumed once it had been bought into the home. DIY became increasingly popular during the 1950s. Studies of the use of electrical tools for maintenance in a culture of Make-do-and-Mend following the Second World War and for use in DIY as a hobby can extend my analysis of male participation in domesticity and the gendering of domestic spaces. There are several popular magazines and journals for DIY enthusiasts that would be useful sources alongside oral histories. A contrast with the sewing machine would draw out the gender differences in domestic roles. There are also a number of electrical technologies that were luxury items that were consumed in smaller numbers throughout the 1930s, 1940s and 1950s. These included the teasmade, electric shoe warmers, electric blankets, and electric hot water bottles. The study of these smaller, luxury and novelty electrical technologies would offer insights into gift-giving as a form of consumption and further social differences in the consumption of electrical technologies linked to class and individual identities. An EDA advert for an appliance similar to the Goblin teasmade stated that,

Mr Livinginthe past lets his alarm clock put him out of humour for the day.

Mr Lookingforward makes it switch on a bright light, a cheerful fire and boil his kettle.⁶⁶⁴

In this advert the appliance is presented as modern in a different way to the electrical appliances used in housework, because it is constructed as a technological gadget for forward thinking individuals.

Some of the electrical technologies that I have discussed in relation to their use in the home open up further areas of research that would be interesting. The first is questions about entertaining in the home and the role of electrical appliances. How were the presentability of the home and the ability of the middle class housewife to entertain in the absence of servants

⁶⁶³ Cockburn, C. & Ormrod, S., (1993).

⁶⁶⁴ MOSI Archives, 1989.339/486/79, (n.d.) EDA 142.

facilitated by modern technologies? I touched on the maintenance of a clean home as facilitated by vacuum cleaners as important in outward presentations of the moral and social status of the household to visitors in Chapter 4. However, in the kitchen did the use of refrigerators facilitate entertaining by allowing housewives to cook food and store it in advance and was this put into practice? And what about the hostess trolley, in keeping food warm between kitchen and dining table? Chapter 3 focused on the kitchen but I limited the discussion to electric cookers and refrigerators. The use of electricity in the modern kitchen also raises questions about the influence of portable appliances in the kitchen space? How did they alter the space when in use? And where were they stored? Did their use and storage on counter-top contradict the aesthetic of efficiency and modernity? In Chapter 6 I touched on how product design was altered in order to generate and manipulate markets for new models of electric razors. It would be interesting to develop case studies of specific electric appliances beyond their consumption within the space of the home to explore how technical changes in appliances were related to commercial competition between different brands after 1960.

Finally it would be informative to explore further how consumers actually understood electricity. When I first began my project I was told a wonderful anecdote about a woman who was concerned that a loose wire left by the electricity was leaking electricity and she would be charged for it. She mistakenly understood electricity to be a fluid. I was unable to find any recorded evidence of similar stories but it is something that would be interesting to explore in future oral history work. Electricity has no physical properties that can be seen, smelt or touched, making it a mysterious force. The nature of electricity as a force was not addressed by the electrical industry in advertising, which focused on emphasising safety and practicalities of use, economy and efficiency. Furthermore the EAW whose principal remit was education focused on understanding technologies not understanding electricity itself.

There was a vast gap between the ideals of modernity constructed and represented in advertising for electrical technologies and the everyday lived realities that existed across different social and regional households. Constructions of the ideal and the reality of the consumption of electricity informed and constructed one another through the medium of advertising in a complex and dynamic relationship. The gap between them was closing in the 1950s as municipal housing schemes further increased the number of homes wired for electricity, and there was a greater availability and affordability of electrical technologies on the British consumer market. Whilst levels of saturation for electrical technologies had increased greatly, whether they lived up to the promises of advertising is bought into question by the limitations of their use.

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